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XFRACAS 2018 User's Guide
Chapter 1: Introduction

Intro to XFRACAS
ReliaSoft XFRACAS by HBM Prenscia is a highly configurable, web-based Failure Reporting, Analysis and Corrective Action System (FRACAS). Depending on how your implementation is configured, this can include incident/failure reporting, failure analysis on returned parts, part tracking for serialized systems, root cause analysis, team-based problem resolution and tracking the completion of assigned actions.

The website is highly configurable and the specific features, field names and behavior will depend on the settings for your implementation.

This guide covers features that may be available to all XFRACAS users. If you have administrative responsibilities for your implementation, you may also need to consult:

- Implementation Guide (*.pdf) - guidance for an IT admin to prepare the database and web server(s) and install the website. It also provides tips to help an application admin complete the initial configuration.

- Admin Guide - covers features that are available only to users with administrative permissions.

XFRACAS can also be integrated with other ReliaSoft applications, which provides intelligent integration between reliability program activities and tools while simultaneously facilitating effective information sharing and cooperation between engineering teams of any size. Other ReliaSoft software by HBM Prenscia includes: Weibull++, RGA, BlockSim, RENO, Lambda Predict, XFMEA, RCM++, RBI, MPC, and Synthesis Enterprise Portal.

New in Version 2018: XFRACAS
Here's a quick overview of the main new and improved features in XFRACAS 2018.

Data Encryption and Secure Communication
In both Oracle and SQL Server, your organization can choose to enable Transparent Data Encryption (TDE) on your database server ("data at rest"). For an Oracle implementation, you can also configure the database to require encryption for the connection between the application and the database ("data in transit").

New in Version 2018, we've added the option to encrypt communication between the application and a SQL Server database.
Chapter 1: Introduction

Web Service to Import Data
If you have some basic programming knowledge, you can use the XFRACAS web service in your own custom application. Introduced in Version 11, the web service provides a faster and more flexible way to trigger data import for specific XML files, or to process all files in the XFRACAS import queue.

New in Version 2018, the service now includes functions to insert time/usage data for serialized systems.

Custom Fields for Serialized Parts
XFRACAS uses generic System Templates to identify the parts that may be used in a system and are relevant for reliability analysis (e.g., a reliability-wise "Bill of Materials"). If applicable, you can also use Serialized Systems to track the specific parts in a particular piece of equipment.

New in Version 2018, you can configure your own custom fields (called "details") for serialized system parts. This provides more flexibility for equipment operators and other organizations who want to define the general type of component in the template and capture more specific details for the part used in a particular system (such as the part number, man tag, supplier serial number, mac address, etc.).

Time/Usage Metrics
If you configure XFRACAS to track incidents and part repairs/replacements for specific serialized systems, you will be able to capture time/usage data that can be used for reliability data analysis. There will always be one primary metric and you can choose to enable up to two additional fields if desired (e.g., hours, miles, kilometers, cycles, etc.). In Version 2018, the following features now support all three metric fields.

- **Serialized Systems** - When you define a new serialized system, you can enter the starting age if the part was previously used before being added to the system.

- **Repair and Replace Parts** - For serialized incidents, you can enter the usage of the failed part at the time when it was repaired/replaced, if it is different than the system. You can also enter the starting age of the replacement part if it was previously used.

- **Extract Data to Weibull++/ALTA or RGA** - When you use the Synthesis Data Warehouse (SDW) to extract data for analysis in ReliaSoft desktop applications, you can choose any of the metrics captured in XFRACAS.
Custom Fields for Data Extracted to Weibull++, ALTA or RGA

In the Synthesis Data Warehouse in Weibull++, ALTA and RGA, a wizard guides you through the steps to select the XFRACAS part(s) you want to analyze and specify your preferences for building a data set for life data analysis or reliability growth analysis.

The extracted data set can include standard fields such as part number, failure mode, occurrence date, etc. New in Version 2018, we've added the ability to include your own custom fields with any of the following "detail types": Alphanumeric Input Box, Check Box, Company, Contacts, Currency, Date, Numeric Input Box, Users, Yes/No Button, or Select List, Administrative Controlled.

History of Changes to System Status Field

In an incident report for a serialized system, users can record 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 failure. Starting in Version 11.1.1, we've added the ability to view the history of all system statuses saved for the incident.

In Version 2018, we've also added the option to hide or show the System Status field in “part incidents” that are not associated with a particular serialized system.

"Print Preview" Enhancements

XFRACAS’s flexible Print Preview feature uses *.xslt templates to enable your organization to customize the print-ready output for incidents, problems, projects, failure analyses and customer support records. Starting in Version 11.1.3, any image files attached to the record (*.gif, *.jpg/jpeg or *.png) will display as pictures, and URL attachments will show as clickable links.

You can also configure Print Preview Detail fields that display as clickable links within the record and generate your own completely customized output based on the record’s data. For example, you can use this flexible feature to create your own dashboard of the particular metrics you’re tracking via Problem reports, or to present data captured in a particular section of your Incident reports. New in Version 2018, you can now view these links in any list of records generated from the Reports page. This saves time when you want to go directly to the specialized output without first opening each XFRACAS record.

Number of Lines for Description Fields

XFRACAS provides extensive options to configure user interfaces to capture data that's relevant for your particular products and processes. New in Version 2018, we've added the ability to specify the number of lines for text description fields. You can set a default height that's appropriate for most descriptions, and also set different heights for specific fields.
Chapter 1: Introduction

Set "From" Address for E-mail Notifications
XFRACAS provides many flexible options for generating e-mail notifications to alert users when action may be required. By default, e-mails are sent from the address of the user who performed the action that triggered the notification. Starting in Version 11.1.1, we've added the option to specify a single "From" address for all e-mails, which may be useful for implementations where XFRACAS users are both internal and external to your network.

Set "Close Date" for Problems
Your organization can configure the XFRACAS Problem page to facilitate any team-based problem resolution method with 4 to 8 steps (such as 8D, Six Sigma DMAIC, IDOV, MDOV, etc.). The application tracks the completion date and approval for each step.

New in Version 2018, we've added the ability to set the "Close Date" for the final step. This enables an authorized user to manage closed records while still maintaining correct dates for when work was performed.

Technical Support
The configurable settings for your XFRACAS implementation will be set and maintained by user(s) with administrative permissions within XFRACAS. If you have questions about these settings, the About page displays the name and e-mail address for the primary administrative contact for your implementation.

For organizations with an active maintenance agreement, we provide technical support for software-related issues via a network of regional offices and partners/distributors throughout the world. To get contact details for technical support worldwide, visit http://www.reliasoft.com/about/contact-us.

When Requesting Tech Support
When you contact us to request technical support, please be prepared to provide the following information:

- Your phone number and e-mail address.
- The Build Version of your implementation (displayed on the About page).
- The name and version of your web browser.
- What you were doing when the problem occurred and exactly what happened. Please include the specific wording of any message(s) that appeared.

Note: Technical support representatives are not reliability consultants. Their assistance is limited to technical issues that you may encounter with the software tools.
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 Windows login to the XFRACAS website, you will not be prompted to log in separately. If you are prompted to log in, 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 website and you have reason to believe that no update is in progress (e.g., other users are able to access XFRACAS), please double-check that the domain part of your login is present (domain\username). If your login is configured correctly and you continue to receive this error message, please contact an application admin for assistance.

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

- You must access XFRACAS from a computer that has been logged in to the network using a valid domain\username and password.
- You must have been granted access to XFRACAS by an application admin. 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. Version 9 or higher 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.

Requesting Access to XFRACAS
If you do not have permission to access XFRACAS, when you attempt to open a page, you will see a message stating that your username is unknown. Click Request XFRACAS Account to open the New User page.

On this page, your network login will be pre-populated by XFRACAS, 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 admin 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 by an IT admin, 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.

**User Information**

Your user information is initially based on the information that you provide when requesting access to XFRACAS, or the information entered by an application admin when giving you access to XFRACAS. 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 XFRACAS. The entity for subsequent screens is based on either the last screen or the entity of the record that you are viewing.

If desired, you can click the **Edit** icon, to add an image that will be associated with your user account.

To save your changes, choose **Options > User Information > Save**.
Chapter 3: Working in XFRACAS

Entities
XFRACAS can be configured with a single entity (where all users share the same configuration settings and data) or with multiple entities (where each entity has its own separate permissions, settings and data).

If your implementation has more than one entity, your user account specifies which entity(ies) you can access, and which entity will be active by default each time you visit XFRACAS. Configurable settings (e.g., field names) and your personal permissions may be different in each entity that you use. Analysis data (e.g., system templates, serialized systems, incidents, etc.) is separate for each entity.

Identifying the Entity
When applicable, a drop-down list at the top of the page allows you to select which entity is currently active. Remember that you cannot change the entity for a new system template, serialized system or record (e.g., incident, problem, etc.) after it is created.

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.

Requesting Access to an Entity
To request access to an entity, choose Options > Settings > Request Entity Access.

On the Request Entity Access page, the Entities field will display the entities that you do not already have access to. To request access to multiple entities, hold down the CTRL key and click your selections.

To send your request to an application admin, choose Options > Request Entity > Send.
Record Types

XFRACAS is highly configurable to meet your organization's needs and fit with your processes and terminology. This topic provides a brief overview of the types of records that may be used, depending on configurable settings. If your implementation has more than one entity, these records will be managed separately in each.

- If you are tracking serialized systems, a customer support record (CSI) can be used to capture a detailed history for each piece of equipment, such as customer contact information, installation details, reported incidents, operating time and the current status of the system.

- An incident captures information for a single occurrence of an issue (e.g., failure, planned downing event, customer request, etc.) and allows you to track how it is addressed.
  - If parts were repaired or replaced during an incident, a failure analysis report can be used to capture the details of failure analysis and remanufacturing activities.

- When multiple incidents are attributed to the same underlying issue, a problem (called "PRR" in prior versions of XFRACAS) can be used to link all instances to a single report and facilitate a team-based approach to understand the root cause and take actions to prevent similar issues from occurring again in the future.

- In much the same way that problems are used to manage related incident reports, projects can be used to manage related problems.

- Throughout XFRACAS, you can create actions that must be performed to address a specific incident, failure analysis report, problem, project or CSI.

Ribbon

Home Tab
The Home tab of the ribbon contains the following commands:

Portal

XFRACAS opens the XFRACAS Portal page.

SEP opens the Synthesis Enterprise Portal, if it has been implemented.
Chapter 3: Working in XFRACAS

View
- **Reports** opens the [Reports page](#), which allows you to generate results for a variety of predefined reports.
- **Charts** opens the [Charts page](#), which allows you to generate results for a variety of predefined chart reports.
- **Dashboard** opens the [XFRACAS Dashboard page](#), which displays a predefined set of reports and charts.

Create
- **Incident** opens the [Incident page](#) to create a new incident.
- **Problem** opens the [Problem page](#) to create a new problem.
- **Project** opens the [Project page](#) to create a new project.
- **Customer Support** opens the [CSI page](#) to create a record that keeps track of information for a particular serialized system.

Record Groups
When you are working with a record (e.g., incident, problem, etc.), the Home tab will also contain a group of commands appropriate to the record type.

When you are creating a record, the following commands may 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 an application admin, 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 an application admin, 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.
Chapter 3: Working in XFRACAS

When you are working with an existing record, the following commands may 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.*
Chapter 3: Working in XFRACAS

**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 of the ribbon contains the following commands:

**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.
Chapter 3: Working in XFRACAS

- **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.

**Portal Preferences**
If you are working on the XFRACAS Portal page:

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

- **Load Application Defaults** returns to the default Portal preference settings.

**User Information**
If you are working on the User Information page:

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

**Request Entity**
If you are working on the Request Entity Access page:

- **Send** sends your request for entity access to an application admin.

**Report**
If you are working on the Report Builder page:

- **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](http://xfucas.reliasoft.com).
Dashboard
If you are working on the Dashboard Designer page:

- **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.

Quick Search
The Quick Search box, located in the top-right corner of a page, provides a quick way to open an existing incident, problem, action, project, failure analysis report or customer support record.

Select the type of record from the drop-down list and then type the relevant identifier:

- **Problem #, Incident #, Customer #, Failure Analysis # or Project #** - type the record’s display ID with or without the entity prefix (e.g., 301 or ENT-I-301). If you do not include the entity prefix, it will search only within the current entity. If you include the prefix, it will search for an exact match in all entities that you have permission to access.

- **Action #** - type an action number, which is unique across all entities.

- **Serial Number #** - type the serial number of a serialized system that has a customer support record. If an exact match is not found, XFRACAS displays a list of all CSIs in the current entity.

- **RMA Number** - type the RMA number of a part that has a failure analysis record.
Chapter 3: Working in XFRACAS

XFRACAS Portal

The XFRACAS Portal displays announcements and tasks that are relevant to you. The display depends on your Portal Preferences. If your implementation has more than one entity, the display may also depend on which entity is currently selected from the list at the top of the page.

To access the portal, choose Home > Portal > XFRACAS.

Announcements

For each announcement, an icon indicates whether it is public 📢 or private 👤.

Edit Announcements opens a page where you can create, edit or delete announcements that you have permission to manage. (See Announcements.)

Announcements History displays a list of all your public and private announcements, including any that are "expired" (i.e., today's date does not fall in the range of dates when the announcement was configured to start and stop displaying).

Tasks

For each type of task, the quantity in parentheses shows the total number of items that are eligible to show in your portal. The table will display some or all of those items, depending on the Portal Preferences. To view all records in the Report Results page, click the quantity link.

Tip: If applicable, a label above the table also indicates how many of those tasks are "due" and their dates will be highlighted in red. A task is "due" if the date falls within the offset specified by an application admin for that type of record. For example, if the offset for incidents is 15 days, an incident will be "due" if today's date is => 15 days after the occurrence date.

- Open Synthesis Actions - ReliaSoft desktop actions that are not completed and you are the Person Responsible. This is available only if the database is used with ReliaSoft desktop applications and you have an active Synthesis Platform user account.

- Uncompleted Actions - XFRACAS actions that have not been completed and you are the Owner.

- Unclosed Incidents - incidents that have not been closed and you are the Owner.

- Team Member Unclosed Incidents - incidents that have not been closed and you are a member of the Team.

- Open Problems - problems that have not been closed and you are the Owner.
• **Team Member Open Problems** - problems that have not been closed and you are a member of the Team.

• **Problems to Review** - problems in which you are assigned to review and sign off on a step. (See [Failure Review Boards](#).)

• **My Projects** - projects that have not been closed and you are the Owner.

• **Team Member Projects** - projects that have not been closed and you are a member of the Team.

### Portal Preferences

Use the Portal Preferences page to customize which items are displayed in your [XFRACAS Portal](#) and [Links panel](#).

If you have permission to edit portal preferences, you can click the **edit** icon in the **Tasks** section of the portal or choose **Options > Settings > Portal Preferences**.

### Default vs. Saved Preferences

The default portal preferences are managed separately for each **entity**. If you have not saved changes to your own personal portal preferences, your portal will use the default settings for the entity that you are currently viewing, and those settings may be different in each entity.

Alternatively, if you choose to save your own personal portal preferences, they will be the same for any entity that you view. To do this, make the desired changes in the Portal Preferences page and then choose **Options > Portal Preferences > Save**.

**Tip:** If you have the "Portal - Set Default Portal Preferences" permission for the entity that you are currently viewing, **Save as application default** will display at the top of the page. If this check box is selected when you click **Save**, the changes will be saved as the defaults for that entity and also saved as your own personal preferences for all entities.

To return to using the defaults for each entity, choose **Options > Portal Preferences > Load Application Defaults**.
Show All, None or Show Only

For links, announcements and each type of task, you can choose from the following options:

- **Show All** - displays all items of that type, and they will be sorted from the newest to the oldest date.
- **None** - the section will not display, even if there are items of that type.
- **Show Only** - displays no more than the specified quantity of items (from 1 - 99). You can choose whether to show items with the Newest or Oldest dates.

Display Order

For each type of task, the Display Order sets the order in which that section will display on the portal page.

To hide sections for task types that do not contain any items, set Display Empty Portal Sections to "Yes."

Display My Entities

The Display My Entities option is relevant if you have access to more than one entity.

- **Show All** - displays items from all entities that you have access to.
- **Show Current** - displays items only from the entity that is currently selected at the top of the page.

Display My Report on Load

You have the option to run your own custom report when the XFRACAS Portal page loads. To enable this feature, set Display My Portal On Load to "On" and use the drop-down to select any of the saved templates from your list of "My Reports."

The Interval field determines how frequently the report runs. If set to 0, the report will run each time you load the portal page. If the interval is greater than 0, the report will run only if it has been at least that many hours since the last time the report ran. For example, if you want the report to run no more than once a day, set the interval to 24 hours.

Links Panel

The Links panel (displayed on the left side of most pages in XFRACAS) provides quick and convenient access to selected XFRACAS reports and charts, as well as any uniform resource locator (URL) that can be accessed via a web browser.

This panel may contain personal links that are visible only to you as well as public links that are visible to all users in a specified entity.
To manage your links, click **Edit Links** in the upper right corner of the panel.

### Creating, Updating or Deleting a Link
- To create a new link, select the blank option in the **Select Link to Edit** list then enter at least the required fields and click **Home > Portal Link > Save**.
- To edit an existing link, select it from the list then make the desired changes and click **Home > Portal Link > Update**.
- To delete an existing link, select it from the list and click **Home > Portal Link > Delete**.

### Link Properties
- **Title** - the anchor text that is visible in the page.
- **Type** - in addition to URL (which is always available), this list also includes any type of report or chart that you can view in the Reports and Charts pages (e.g., Standard Reports, My Reports, Public Reports, etc.).
  - After selecting the type, you can type the **URL** or select a specific **Saved Report**.
- **Group** - the options depend on the entity's configurable settings. The quantity of links displayed in each group depends on the Portal Preferences.
- **Display Order** - sets the display order within the selected group.
- **Start Displaying At** and **Stop Displaying After** - a date range when the link will be visible. If not specified, the link will be visible immediately and will remain visible unless it is manually deleted.
- **Display to Public** - if selected, the link will be visible to all users in the specified entity(ies). The ability to manage public links is available only to users with the "Portal - Create Public Links and Announcements" and "Portal - Modify Public Links and Announcements" permissions.
  - **Owner** - the user who created the link.
  - **Entities** - the entity(ies) where the link will be visible.

### Announcements
The Announcements section in your XFRACAS Portal may contain two types of announcements:

- **Public** announcements are visible to all users in specified entity(ies).
Chapter 3: Working in XFRACAS

Private announcements are visible only to you.

All XFRACAS users can create and manage their own private announcements. Only users with specific permissions are able to create and modify public announcements.

Depending on the Portal Preferences, your portal may show some or all of your announcements, either from the entity that is currently selected or from all entities that you have access to.

Announcements may be configured to display only within a specified date range. If today's date does not fall within the specified range, the announcement will not show in your portal, but you can continue to access "expired" announcements via the Update Announcement and Announcement History pages.

Create, Update or Stop Displaying an Announcement
To manage your announcements, click Edit Announcements in your portal.

- To create a new announcement, select the blank option in the Select Announcement to Edit list then enter at least the required fields and click Home > Announcement > Save.
- To edit an existing announcement, select it from the list then make the desired changes and click Home > Announcement > Update.
- To stop displaying an announcement, select it from the list, specify a date in the Stop Displaying After field (< today’s date) and click Home > Announcement > Update.

Tip: For users with the "Portal - Modify Public Links and Announcements" permission, you can permanently delete an announcement by selecting it from the list and clicking Home > Announcement > Delete.

Announcement Properties
- Title and Description - text that is visible in the portal.
- Display Order - the sequence among all public and private announcements in your portal.
- Start Displaying At and Stop Displaying After - a date range when the announcement will be visible in your portal. If not specified, it will be visible immediately and will remain visible unless it is manually deleted.
- Display to Public - if selected, the announcement will be visible to all users in the specified entit(ies). Only users with the "Portal - Create Public Links and Announcements" permission can create public announcements.
• **Owner** - the user who created the announcement. Only users with the "Portal - Modify Public Links and Announcements" permission can edit a public announcement that was created by another user.

• **Entities** - the entit(ies) where the announcement will be visible.

**Announcement History**

To view a list of all your announcements, including those that have "expired," click **Announcements History** in your portal.

In the Announcement History page:

- If the image in the first column is a solid square, clicking it opens the page where you can view or edit the properties. If the image is an outline, you do not have permission to edit the properties.

- To sort by any of the columns, click the column header.

**A Note About Time Zones**

Depending on the configurable settings for the current entity, 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 0º 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.
Chapter 3: Working in XFRACAS

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.

To change the default time zone for your user account, choose **Options > Settings > User Information.**

## Common Utilities

### Attachments

An **Associated Files** field (aka "attachments table") enables you to conveniently link supporting files and references for an XFRACAS record. Depending on the configurable settings for the entity, this type of field may be available in incidents, problems, failure analysis reports, actions or customer support records.

Use the icons on the right side of the table to add, edit, or remove associated files. The properties depend on the **Data Source Type.** For all types, the **Name** is required and **Description** is optional. The **Section** drop-down list identifies which attachments table will show the attachment. If there are multiple tables in the same record, you can use this field to move the attachment to another section.

### Uploaded File

If the Uploaded File type is enabled for your implementation, you can use the **Associated File** field to browse for and upload a copy of a file. Depending on the configurable settings, the file will either be saved as a blob in the database or stored in a specified folder on the web server.

Note that if you import or export a record that has an uploaded file attachment, the XML file will contain the blob ID or the database path.

### URL

The URL type is always available. You can use the **URL** field to type a uniform resource locator that can be opened via a web browser (e.g., http://www.reliasoft.com).

### Text

The Text type is always available. You can use it to attach text notes or references for the record (similar to a list of citations in the bibliography of a report).

### XFRACAS Record

The XFRACAS Record type is always available. This creates either a one-way link or a two-way link to another XFRACAS record.
After you have selected the **XFRACAS Type** (incident, problem, failure analysis, action or customer support), you can specify the **XFRACAS ID** for an existing record of that type. To view a list of records of that type in the current entity, click **Find**.

**Reciprocal Section** determines whether the link will be one-way or two-way. If **None**, the attachment will link only from the current record to the other record. If you specify a reciprocal section (i.e., select the name of an attachments table in the other record), the other record will also link back to the current record. The name and description will be the same for the links in both records. If you remove a reciprocal link from either record, it will be removed from both.

The optional **Relationship Type** field adds a text label in the attachment type column of the table. The options depend on the configurable settings for the current entity. If it is a reciprocal (two-way) link, the current record will display the label you have selected (e.g., "Master") and the other record will display the corresponding label (e.g., "Sub").

Note that if you import or export a record that has an XFRACAS Record attachment, the XML file will contain the ID for the other record (one-way link) but it will not contain the reciprocal section (two-way link).

**Send E-mail Utility**

The Send E-mail utility allows you to send an e-mail that includes a link to the current record. To open this utility 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**.

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. 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.
Chapter 3: Working in XFRACAS

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.

![Select Existing Utility](image)

**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, ![Search](image), 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. User groups can be defined by an application admin 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 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.

**Status Fields**

A **Status** field allows users to add notes about the progress made for a particular issue or assignment, and also send e-mail notifications if applicable.

Depending on the configurable settings for an entity, these fields may appear in **incidents**, **failure analysis reports**, **problems**, **actions**, **projects** or **CSIs**. Within each status field, the notes/updates will be displayed in order based on the creation date (either ascending or descending, depending on the configurable preference).

- **Add** creates a new note that will be added to the list.
- **Edit** modifies the note that is currently selected.
Chapter 3: Working in XFRACAS

When you create a new status note or edit an existing one, the utility may include **E-mail Notify** check boxes that determine which user(s) will receive an e-mail notification when you click **Save**.

The e-mail options depend on the record type (incident, problem, etc.) and the configurable settings for the entity. For each record type, an application admin can determine which check boxes are available, which check boxes are selected by default, and what information is included in the notification e-mails.

**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.

### Serialized Page

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

- Click the System Configuration link in the summary area at the top of the Incident page for a serialized incident.
- Click the System Configuration link in the summary area at the top of the CSI page.
- Choose Options > Report > Serialized Search when working with the Report Builder then choose the system that you want to view.

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 > Incident > Create to save the new record.

Entity

If your implementation 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.

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.
Chapter 4: Incidents

- **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 an application admin 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.

### 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.)

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.

### Responsible Part(s)

The **Responsible Part** field identifies the part(s) that caused the incident to occur. This field uses the system template(s) defined for the current entity.

If the settings for the current entity allow you to select multiple parts, click the **Edit** icon, to view the tree. If the entity is configured to require a single responsible part, you will just see a drop-down list of parts that have an owner.

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

### Incident Owner and Creator

You can use the drop-down lists to set or change the incident owner and creator. If you create a new incident without selecting a users, it will be set automatically when the record is saved.

- The incident **Owner** will be set to the owner of the first responsible part that has a part owner.
• The incident **Creator** will be set to the user who created the incident.

Depending on the configurable settings for the entity, the incident owner may receive e-mail notifications when the incident is created, when actions are created for the incident, etc.

### Team Members

If enabled for the current entity, the **Team Members** field identifies the users who will be working on the issue, and their roles on the team. This field is not displayed until the record is created. (See [Assign Team Members Utility](#).)

<table>
<thead>
<tr>
<th>Team Members</th>
<th>Team Role</th>
<th>User</th>
<th>Team Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINEER, JOHN</td>
<td>Team Member</td>
<td>MANAGER, JIM</td>
<td>Team Leader</td>
</tr>
<tr>
<td>TECHNICIAN, JILL</td>
<td>Team Member</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You can click the link for any team member’s name to send an e-mail regarding the record. (See [Send E-Mail Utility](#).) Depending on the configurable settings for the entity, team members may also receive e-mails when a status update is added or modified. (See [Adding Status Updates](#).)

**Tip:** If the **Audience Restriction** field is enabled for the entity and you select "Attorney/Client Privilege," the record 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

An **Actions** field contains a list of specific assignments that need to be tracked and completed. If enabled for the entity, this type of field is not displayed until the record is created.

Click **Create New Action**, to add a new assignment for the current incident. (See [Actions](#).)

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...</td>
<td>04/17/2017</td>
<td>TECHNICIAN, JILL</td>
</tr>
<tr>
<td>20</td>
<td>Second action that needs to be per...</td>
<td>04/20/2017</td>
<td>ENGINEER, JOHN</td>
</tr>
</tbody>
</table>

### Status Updates

If enabled for the current entity, a **Status** 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](#).)
Chapter 4: Incidents

Associated Files or Links
If enabled for the current entity, an Associated Files 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.)

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++, ALTA 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.

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 that 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 implementation may have different fields enabled, with different names, and/or may be 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.).
Chapter 4: Incidents

- **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](http://xfacas.reliasoft.com).)

- **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.

- **Response Time** - the number of hours between the Occurrence Date and the Service Response Date. This is only displayed if the Service Response Date is enabled for the entity.

- **Downtime** - the number of hours between the Occurrence Date and the Completed 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 that 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 implementation may have different fields enabled, with different names, and/or may be 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. This field is always shown for serialized incidents. Starting in Version 18, an application admin can choose whether to show it for part incidents.

- **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 an application admin.
  
  - 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 that 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 implementation may have different fields enabled, with different names, and/or may be 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.)

- **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 that 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 implementation may have different fields enabled, with different names, and/or may be 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 an application admin.

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

• **Resolution** - describes how the incident was addressed.

• **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**.)

  • 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.*
Chapter 4: Incidents

- 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 Time/Usage for the Repaired/Replaced Part
If you replace, repair or mark a part as failed, you can enter the time/usage for that part (e.g., "Run Hours," "Number of Starts" or "kw Run Hours") if it is different than the time/usage for the system.

If you don't enter a value, this will be set automatically based on the system's time/usage metric(s) in the System/Component Information area (and the part's starting age on the system).

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

If you replace a part in a serialized system, you can enter the **Starting Age** of the replacement part (e.g., "Run Hours," "Number of Starts" or "kw Run Hours") if it had already accumulated age before being added to the system (i.e., replacement with a "used" part).

If you extract the data to Weibull++ or RGA for reliability analysis, the starting age may be added to the part's time on the system to estimate the part's time/usage. (For example, if the part had a starting age of 100 hours when it was added to the system, the system runs for 200 hours before the next failure and you have not directly specified the part's time/usage, we assume it 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

Use the Failure Analysis page to record the findings from a detailed failure analysis on a part that has been repaired or replaced during an incident.

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.

After you have entered the required fields (highlighted with red boxes), choose Home > Failure Analysis > Create to create the new record.

The fields and features on this page depend on the configurable settings for the entity. Your implementation may have different fields enabled, with different names, and/or may be used in a different way that fits the needs of your organization. Some of the fields in a typical implementation include:

Failure Type
The Failure Type drop-down list contains the same options that were available in the incident's Repair or Replace Parts window. Together with the incident category, this field determines whether the failure will be treated as "chargeable" or "non-chargeable" in reliability analysis.

If you change the failure type in the failure analysis page for a repaired/replaced part, it will also be updated in the incident. (See Select the Failure Type.)

Associated Problem
A failure analysis report is always linked to the incident in which the part was repaired or replaced. In addition, that incident may be associated to one or multiple problems, and each of those problems can be associated to a project.

Failure analysis reports are not automatically associated to all the problems that the linked incident is associated to. Use the Associated Problem field if you wish to create an association to one of those problems. If a failure analysis report is directly associated to a problem, it can be tracked in the project(s) that the problem is associated to.

Status Updates
A Status field allows users to add notes about the progress made, and also send e-mail notifications if applicable. If enabled for the entity, this field is not displayed until the record is created. (See Status Fields.)
Associated Files or Links

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

Actions

An Actions field contains a list of specific assignments that need to be tracked and completed. If enabled for the entity, this type of field is not displayed until the record is created.

Click Create New Action, +, to add a new assignment. (See Actions.)

Technician Name

The Technician Name fields allow you to specify the user(s) who performed various tasks in the failure analysis. These drop-down lists show users who have the "FA Engineer" category for the current entity.

Test Duration

In the ATP/Burn-in Area, the Test Duration fields allow you to specify the length of the test in hours or portions of an hour (e.g., 1 indicates 1 hour and .25 indicates 15 minutes).
Chapter 6: Problems

Use the Problem page (called "PRR" in previous versions) to record and view information for an issue that requires a team-based approach to understand the root cause and take actions to prevent similar issues from occurring again in the future.

If you have permissions to create a new problem, choose Home > Create > Problem.

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

Entity

If your implementation has more than one entity, the fields and options may be configured differently in each. 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.

4 to 8 Steps

XFRACAS can be configured to support any problem resolution methodology from 4 to 8 steps (e.g., 8D, Six Sigma DMAIC, etc.). The areas and fields depend on the configurable settings for the entity. Some or all of the following steps may be enabled for your implementation.

- Establish the Team (required)
- Describe the Problem (required)
- Implement and Verify Containment Actions
- Identify and Verify Root Cause
- Choose and Verify Permanent Corrective Actions (required)
- Implement Permanent Corrective Actions
- Prevent Recurrence (required)
- Congratulate the Team
Completing Each Problem Step
The bar(s) for completed steps are green. The bar for the current step is red.

To complete a given step, the **Completed By** and the **Completed Date** fields must be filled out, and the record must be saved.

Depending on the configurable settings, you may also be required to complete all actions associated with the step (Closure Restriction Level 3).

In addition, any of the steps 2 through 8 may allow or require review and sign-off by a Failure Review Board (FRB). (See [Failure Review Boards](#).)

**Owner and Creator**
You can use drop-down lists to set or change the record's owner and creator.

Depending on the configurable settings for the entity, the owner may receive e-mail notifications when actions are created for the record.

**Team Members**
A **Team Members** field identifies the users who will be working on the issue, and their roles on the team. If enabled for the entity, this field is not displayed until the record is created. (See [Assign Team Members Utility](#).)

You can click the link for any team member's name to send an e-mail regarding the record. Depending on the configurable settings, team members may also receive e-mails when a status update is added or modified.

**Tip:** If the **Audience Restriction** field is enabled for the entity and you select "Attorney/Client Privilege," the record 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.

**Associated Incidents and Projects**
Sometimes there are multiple incident reports that can be attributed to the same underlying problem. If enabled for the current entity, **Associated Incident Reports** shows a list of chargeable and non-chargeable incidents that are associated with the problem.

To update this list, click **Assign/Remove Incidents**. In the Assign Incidents to Problem window, click **Filter** to display a list of incidents that match the specified criteria. There is a check box in
the row for each incident. If the check box is selected when you click **Save**, the incident will be associated with the problem.

**Actions**

An **Actions** field contains a list of specific assignments that need to be tracked and completed. Depending on the configurable settings, there may be separate actions tables in different areas of the page. This type of field is not displayed until the record is created.

Click **Create New Action**, to create a new assignment. (See **Actions**.)

**Status Updates**

A **Status** field allows users to add notes about the progress, and also send e-mail notifications if applicable. Depending on the configurable settings, there may be zero, one or multiple status fields in different areas. This type of field is not displayed until the record is created. (See **Status Fields**.)

**Associated Files or Links**

An **Associated Files** field allows users to upload file attachments, link to files in another location (e.g., a document management website) or link to another record in XFRACAS. Depending on the configurable settings, there may be zero, one or multiple attachment fields in different areas. This type of field is not displayed until the record is created. (See **Attachments**.)

**Closing a Problem**

Once the required number of steps have been completed, the **Set Close Status** and **Close Date** fields will appear in the final step. The options in the drop-down list depend on the configurable settings for the entity.

Depending on the settings, 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 are completed.

Starting in Version 2018, you can specify the date when the problem was closed. If you select a close status without specifying the date, the current date will be applied. If you have the "Problem - Open a Closed Problem" permission, you will be able to change this date if needed.

**Failure Review Boards**

Depending on the configurable settings for the entity, any of the steps 2 through 8 in the **Problem** page may allow or require review and sign-off by a Failure Review Board (FRB).
Chapter 6: Problems

Review a Step Assigned to You
If your name is in the list, you can select the **Yes** or **No** option to indicate your approval or disapproval of the decision to close the current step.

<table>
<thead>
<tr>
<th>FRB Approved By: Edit Reviewer List</th>
<th>Reviewer Name</th>
<th>Category</th>
<th>Sign-off Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGINEER, JOE</td>
<td>D2 Approver</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>MANAGER, JANE</td>
<td>D2 Approver</td>
<td></td>
</tr>
</tbody>
</table>

If you reject closure, you will be prompted to specify the reason and a "Rejected" label will be displayed. Any user can point to or click this label to see the reason specified.

Assign Reviewers to a Step
To assign or remove members of the FRB, click the **Edit Reviewer List** link.

The **Available Reviewers List** (left) shows XFRACAS users who belong to the approver category for this step, and the Selected Reviewers List (right) shows the users assigned to the FRB for this problem. 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.

Depending on the configurable settings, the reviewers may be required to sign off in the order in which they're listed. To move a reviewer up or down in the list, select the name and click (+) or (-).

If you remove a reviewer who has already been saved for the step, you will be prompted to provide a reason. Click **View Reviewer History** to see a list of all reviewers who have been removed.
Chapter 7: Projects

You can use the Projects page to manage related problems in much the same way that the Problem page can be used to manage related incidents.

If you have permission to create a new project, choose Home > Create > Project.

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

Entity

If your implementation has more than one entity, the fields and options may be configured differently in each. 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.

Owner and Creator

You can use drop-down lists to set or change the record's owner and creator.

Depending on the configurable settings for the entity, the owner may receive e-mail notifications when actions are created for the record.

Assigning a Team

A Team Members field identifies the users who will be working on the issue, and their roles on the team. If enabled for the entity, this field is not displayed until the record is created. (See Assign Team Members Utility.)

<table>
<thead>
<tr>
<th>Team Members:</th>
<th>User</th>
<th>Team Role</th>
<th>User</th>
<th>Team Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOHN</td>
<td>Engineer</td>
<td>Team Member</td>
<td>JIM</td>
<td>Manager</td>
</tr>
<tr>
<td>TECHNICIAN</td>
<td>Technician</td>
<td>Team Member</td>
<td></td>
<td>Team Leader</td>
</tr>
</tbody>
</table>

You can click the link for any team member's name to send an e-mail regarding the record. Depending on the configurable settings, team members may also receive e-mails when a status update is added or modified.

Associated Problems

The Associated Data area links to the problem reports that are relevant for this project. To add or remove problems, click Create New Problem or Assign/Remove Problems.
Chapter 7: Projects

In the list of problems:

- **Status** shows the problem step (e.g., Describe the Problem, Prevent Recurrence, etc.) that needs to be completed next.

- **# of IRs** shows the quantity of incidents associated to the problem. Click the link to see a list of those incidents.

- **Last Occurrence** shows the occurrence date for the most recent incident associated to the problem.

- **Cpt. Date** shows the closure date for the problem.

If applicable, this area also displays:

- **Incidents** that are associated to a problem that is associated to the project. Click **Hide/Display Associated Incidents** to toggle between showing either the quantity of open and closed incidents or a full list of the incidents.

- **Failure analysis reports** that are associated to a problem that is associated to the project. Note that XFRACAS does not assume that all failure analysis reports linked to an incident that is associated to a problem are also associated with that problem. Rather, in order to specifically associate a failure analysis report to a problem, you must use the **Associated Problem** field in the Failure Analysis page.

**Associated Files or Links**

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

**Actions**

An **Actions** field contains a list of specific assignments that need to be tracked and completed for the project. If enabled for the entity, this type of field is not displayed until the record is created.

Click **Create New Action**, to add a new assignment. (See **Actions**.)

**Status Updates**

A **Status** field allows users to add notes about the progress made, and also send e-mail notifications if applicable. If enabled for the entity, this field is not displayed until the record is created. (See **Status Fields**.)
Closing a Project

A project is considered closed when the Actual Completion Date field has been filled in. Depending on the settings chosen by an application admin, 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.
Chapter 8: Actions

Throughout XFRACAS, an Actions field contains a list of specific assignments that need to be tracked and completed. For incidents, failure analysis reports, CSIs and projects, there can be a single actions field in each type of record. For problems, there can be separate actions fields for different aspects of the problem resolution process (description, containment, root cause analysis, etc.).

Actions Fields
For all fields of this type, the table shows actions that have been assigned for the current record. 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.

To add a new assignment, click Create New Action +

<table>
<thead>
<tr>
<th>Actions:</th>
<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 performed</td>
<td>04/17/2017</td>
<td>TECHNICIAN, JILL</td>
<td></td>
</tr>
<tr>
<td>▼ 20</td>
<td>Second action that needs to be performed</td>
<td>04/20/2017</td>
<td>ENGINEER, JOHN</td>
<td></td>
</tr>
</tbody>
</table>

Action Properties
The fields and features depend on the type of action and the configurable settings for the entity. Some of the properties in a typical implementation include:

- **Associated [Incident/Problem/Project/CSI/Failure Analysis]** - the display ID of the record that the action is associated to (e.g., ENT-I-101 or ENT-PB-15). If you replace this with the identifier for another record of the same type, it will move the action to the other record. For example, you can move an incident action from one incident to another; but you cannot move an incident action to a problem, project, CSI or failure analysis report.

- **Owner** - the user who is assigned to perform the action. If the entity is configured to send e-mail notifications to action owners, changing the owner will send an e-mail to the new owner and to the previous owner.

- **Category** - this drop-down will always have a main category. Depending on the configurable settings, it may also have sub-categories.
  
  - The main category indicates the field where the action is displayed (e.g., in an incident, in the Description step for a problem, etc.). For incidents, failure
analysis reports, CSIs and projects, this can't be changed. For problems, changing the main category moves the action into table in another section of the page.

- If sub-categories are used for your implementation, you can select from any of the predefined options.

- **Due Date** - the date when the action is due.

- **Completed** - selecting the check box marks the action as closed, with today's date as the Completed Date.

- **Result** - a description of the results from the action performed. This field must be populated in order to mark the action as completed.

**Create Linked Action**

Depending on how you opened the record, the action properties may be displayed in a popup window or in a page. If you are viewing the action in a page, and if the action properties include an **Associated Files** field (see [Attachments](#)), the **Home > Action > Create Linked Action** command will be available.

This command creates a new action that has a reciprocal (two-way) link to the current action. Both actions will be associated to the current record (i.e., they will appear in the same Actions field) and both actions will have a link to the other action.
Chapter 9: Customer Support

If you are tracking particular serialized systems, use the Customer Support (CSI) page to capture a detailed history for each piece of equipment, such as: customer contact information, installation details, reported incidents, operating time and the current status of the system.

If you have permissions to create a new customer support record, choose Home > Create > Customer Support.

If the CSI wizard is enabled, 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 CSI Wizard or Use Single Form.

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

Entity

If your implementation 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.

Areas and Fields

The fields in the page depend on the configurable settings for the entity. The following topics discuss some types of fields that may be used in specific areas of the page.

- **Customer Support Summary area** - unit commissioning information that has been defined for the current CSI.

- **Customer/Location Information area** - information about the customer who owns the unit and the location where it is installed.

- **Warranty Information area** - initial and extended warranty information for the unit.

- **Installation Details area** - information about the specific installation of the serialized unit.
Incident History

The Incident History table shows the incidents, if any, that have been reported for the serialized system. Click Create Incident to create a new record, or click a record ID to view the full details for that incident.

Replaced Parts

If applicable, the Replaced Parts table shows the parts that were replaced in the last 90 days (or another timeframe, depending on the configurable settings).

Accessories

If enabled for the current entity, an Accessories field allows you to specify additional parts that were installed with this particular serialized system.

The drop-down list shows the accessory parts that have been defined in all the customer support records in the current entity. To define a new accessory part, click Add.

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 until the record is created.

Note that 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 implementation may have different fields enabled, with different names, and/or may be used in a different way that fits the needs of your organization.

- **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 an application admin maintains the time metric field names. Therefore, the name of the Time Metrics field used in your implementation may be different and, depending on the configurable settings for the current entity, this field may display one, two or three time metrics. The 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 an application admin. 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 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 that 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 implementation may have different fields
enabled, with different names, and/or may be used in a different way that fits the needs of your
organization.*

- **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](image). 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](image), to edit the selected unit owner in the Company page.
  - The available options for the **Category** field will vary and are maintained by an
    application admin.

- **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 an application admin.

• 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: An application admin maintains the fields that appear in the Contact Details area. Therefore, the fields that appear in your implementation 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 area is not displayed until the record is created.

Note that 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 implementation may have different fields enabled, with different names, and/or may be used in a different way that fits the needs of your organization.

• 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 that 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 implementation may have different fields enabled, with different names, and/or may be used in a different way that fits the needs of your organization.*

- **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, ![Add icon](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, ![Edit icon](icon), to edit the selected distributor in the Company page.

- **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 an application.
admin. 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.
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.
Chapter 10: Reporting Utilities

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.
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 to reload the last saved settings. If the saved settings are different from when XFRACAS was installed, you can also click 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 to reload the last saved settings for the report or 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 icon.

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

- To remove a field, click the Remove Field icon, 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.

- 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.
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Part Details and Serialized Details
When applicable, report results can include information about the particular template part or serialized system 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 or serialized system.
- 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" (for template parts) or "Serialized Detail" (for serialized systems).

Print Preview Links
A Print Preview field is a link to a customized presentation of the data for a particular record. New in Version 18, if an administrator has configured this type of field in the page for a given record type, you can now include those links in your report. The report results will show the same link that is displayed in the record. Since every record will have the same link, the criterion columns will not be available for this type of field.

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).

<table>
<thead>
<tr>
<th>Filter Criteria Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
</tr>
<tr>
<td>Entity AND</td>
</tr>
<tr>
<td>Incident Number AND</td>
</tr>
<tr>
<td>Incident Status AND</td>
</tr>
<tr>
<td>Responsible Part AND</td>
</tr>
<tr>
<td>Description of Incident AND</td>
</tr>
<tr>
<td>Group 2</td>
</tr>
<tr>
<td>Incident Owner</td>
</tr>
</tbody>
</table>

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.
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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.

![Chart Control](image)

**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 ReliaSoft 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.
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- 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 \[ \text{button} \] 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.

**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.

**Watched Reports and Charts**

The watch feature provides a quick and convenient way to access the reports and charts that you frequently use. If you are watching at least one report, a Watched Reports group will display at the top of the Reports page. Likewise, if you are watching at least one chart, a Watched Charts group will display at the top of the Charts page.

**Watch**

To start watching a report or chart, open the results page and click the **Watch** icon on the toolbar. The icon will be disabled if you are already watching that report/chart. The icon will not display if it is not possible to generate the exact same report again in the future (e.g., because the query criteria are not saved with a template).
Chapter 10: Reporting Utilities

Delete Watch
To stop watching a report, go to the Watched Reports/Watched Charts group and click the Delete watch icon next to the report.

Note: If you have a Synthesis Enterprise Portal (SEP) website that is linked to XFRACAS, the application will automatically create a watch in SEP for any reports or charts that you choose to watch in XFRACAS. The XFRACAS and SEP watches are not synchronized after the original creation. If you later delete the watch in XFRACAS, it will not change the watch in SEP. Likewise, if you later delete or rename the watch in SEP, it will not change the original watch in XFRACAS.
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