ROCKET communications

Air Force Space Command Space and Missiles Systems Center (AFSPC/SMC)

Space Enterprise User Experience Design System (UXDS)

Design Guidance And Specifications For Ground Resource Management (GRM) Service

March 29, 2019

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Overview

Overview

The GRM App Suite provides space situational awareness to the operator by consolidating and surfacing the most important information related to contacts and equipment in the Dashboard application. In addition to this primary usage, the application suite provides a comprehensive set of secondary tasks for managing contacts and equipment in the Schedule and Equipment Manager applications.

Schedule

- View the full schedule of contacts via a timeline or list representation
- Filter schedule view to specific ground stations, satellite vehicles, and more
- View and modify individual contacts
- Add new contacts

Dashboard

- View and investigate all alerts related to GRM, whether contact or equipment based
- View high level data related to contact allocation and execution, equipment health, and more

Equipment Manager

- View and manage the inventory of ground equipment
- Schedule and monitor maintenance for individual equipment

User & Use Case

A common user role and use case was identified in order to understand and organize GRM system requirements, as well as to ensure that users can effectively and efficiently accomplish task requirements within their respective roles.

User

The Ground Systems Operator (GSO) describes the most basic user of the GRM. The GSO role may be defined differently from one organization to another and so levels of expertise are varied and therefore not explicitly defined.

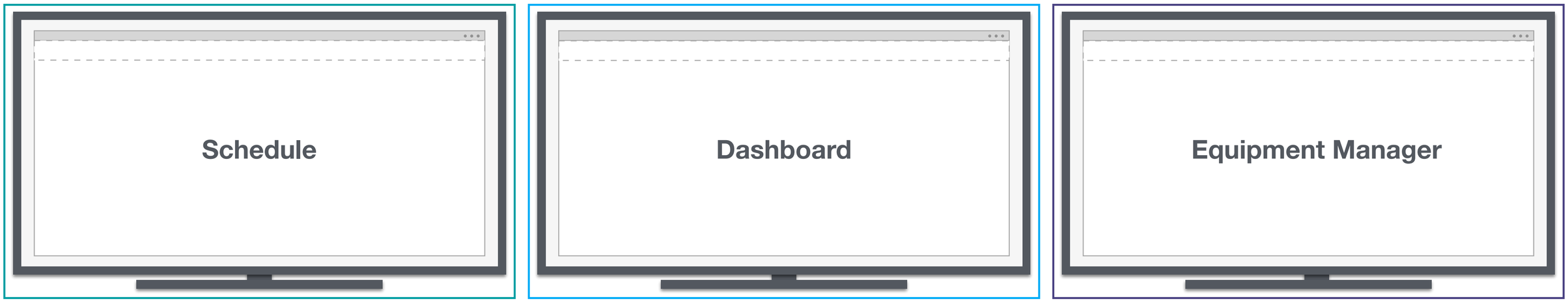
This user may be responsible for multiple systems and a higher scale of operations in a future environment of automation and consolidation.

Use Case

The primary use case that helped to identify, clarify, and organize system requirements was centered around the task of investigating and resolving an alert.

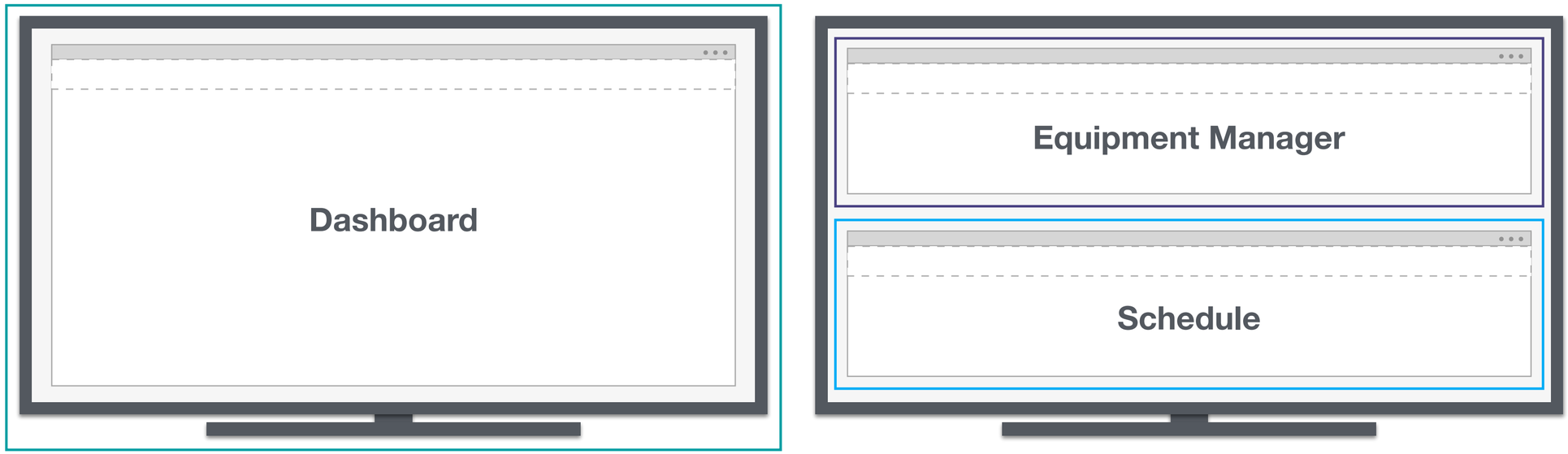
Application Paradigm - Multi-Display Setup

The Dashboard, Schedule, and Equipment Manager applications can be launched and used independently of one another. The diagram below imagines a potential screen configuration for a three-display console. Regardless of the operator's number of displays and screen configuration, the **Dashboard application should be open and unobstructed at all times**.



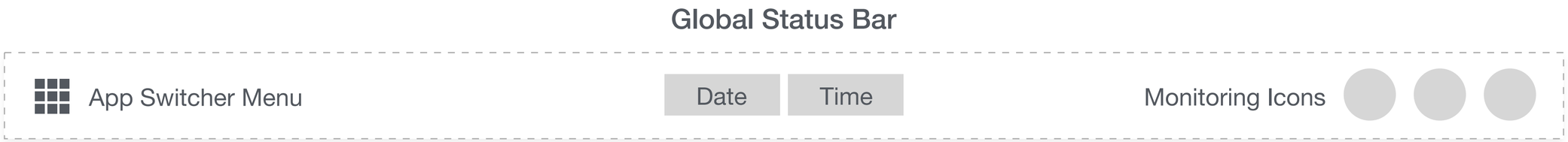
Application Paradigm - Dual-Display Setup

The Dashboard, Schedule, and Equipment Manager applications can be launched and used independently of one another. The diagram below imagines a potential screen configuration for a two-display console. In this configuration, the Dashboard occupies the first full display while the other two applications are resized to fit on the second display. Regardless of the operator's number of displays and screen configuration, the **Dashboard application should be open and unobstructed at all times**.



Application Paradigm - Global Status Bar

The Global Status Bar is a full width view across the top of all of the GRM applications — an area commonly reserved for global status, global command and top-level navigation. The Global Status Bar includes: Application Name, Top Level Navigation, Date & Time, and Monitoring Icons. See the Astro UXDS guidelines to learn more about the Global Status Bar.



The App Switcher Menu allows the user to launch new instances of different applications, sign in/sign out, and edit preferences.

The application title appears directly to the right of the menu.

Date (DOY) and Time (UTC) appear here across all applications.

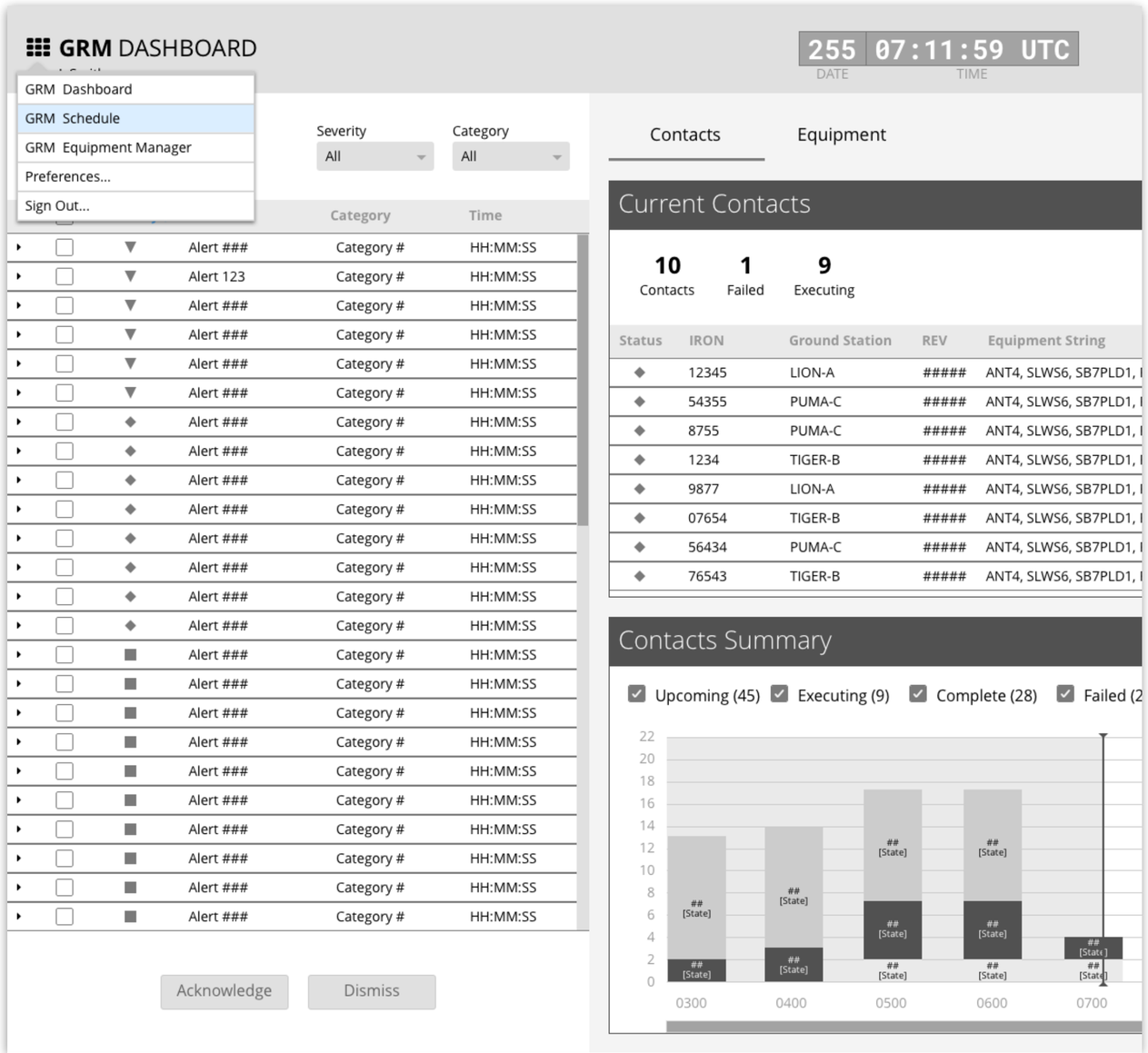
Monitoring Icons display the highest level of consolidated data along categories specific to each application. Each Monitoring Icon displays a color associated with the status level and a badge to indicate the number of alerts.

Global Components

Global - App Switcher Menu

Functionality

The App Switcher Menu allows the user to launch new instances of different GRM applications, sign in/sign out, and edit preferences.



GRM Wireframes.pdf, page 7

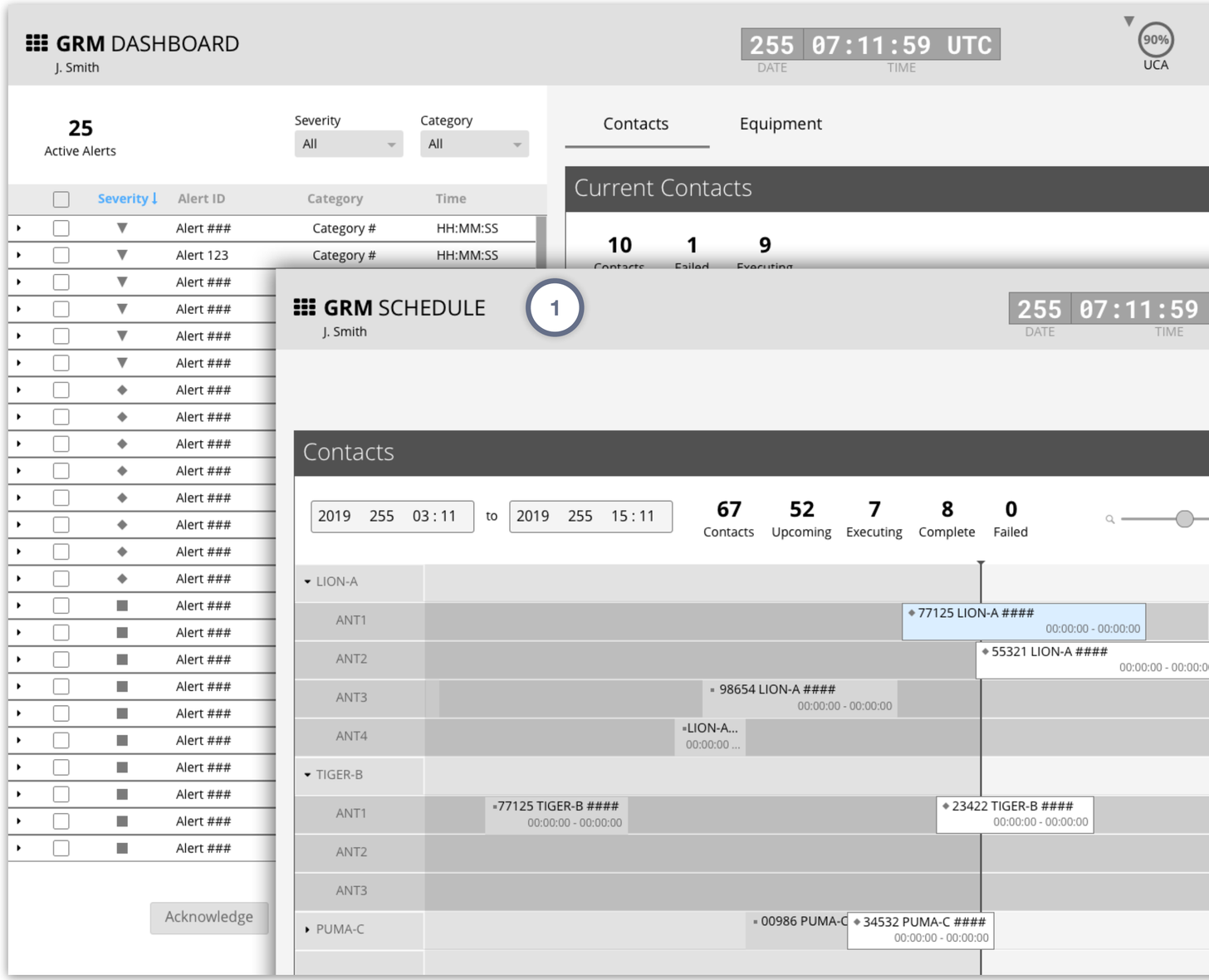
Global - App Switcher Menu

Functionality

The App Switcher Menu allows the user to launch new instances of different GRM applications, sign in/sign out, and edit preferences.

Features & Interactions

1. Upon clicking “GRM Schedule” in the App Switcher Menu, an instance of the application launches in a new browser window.



Global - Monitoring Icons

Functionality

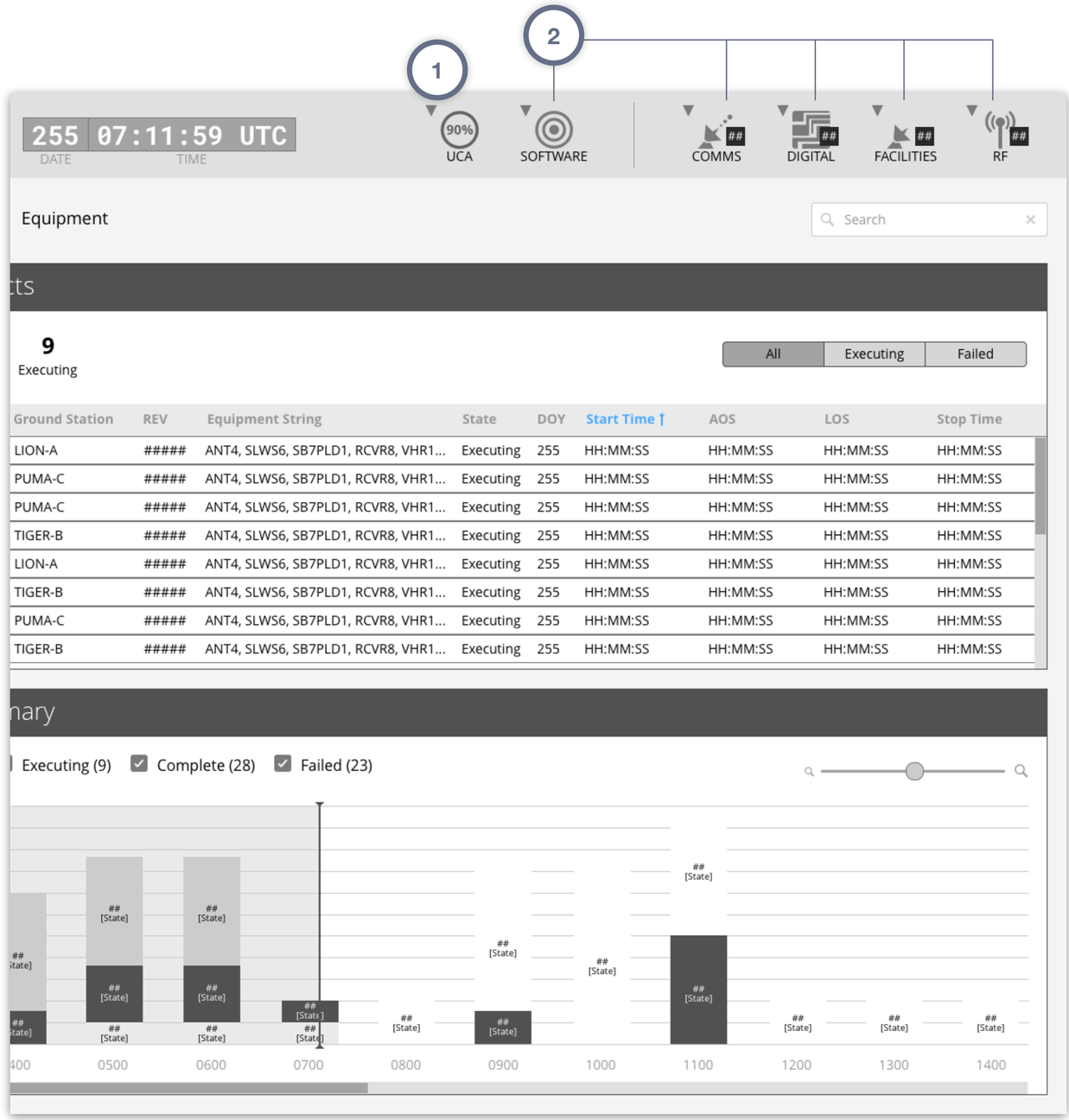
The Global Monitoring Icons display the highest level of consolidated data along categories relevant to their application.

Each GRM application displays a different set of Global Monitoring Icons according to the primary use cases associated with the application.

Dashboard

1. **Upcoming Contacts Allocated (UCA)** - this value (%) tells the operator what percentage of the full schedule of upcoming contacts has its necessary equipment allocated. For example, if the value is 90%, 10% of upcoming contacts do not have the equipment they need to execute.

2. **Software, Comms, Digital, Facilities, RF** - these categories of equipment and software provide the operator the status level (color) of each and a count of any associated alerts inside the badge. The number and taxonomy of these category names should be configured by each squadron at set up time.



GRM Wireframes.pdf, page 6

Global - Monitoring Icons

Functionality

The Global Monitoring Icons display the highest level of consolidated data along categories relevant to their application.

Each GRM application displays a different set of Global Monitoring Icons according to the primary use cases associated with the application.

Schedule

1. **Upcoming Contacts Allocated (UCA)** - this value (%) tells the operator what percentage of the full schedule of upcoming contacts has its necessary equipment allocated. For example, if the value is 90%, 10% of upcoming contacts do not have the equipment they need to execute.

GRM Wireframes.pdf, page 42

Global - Monitoring Icons

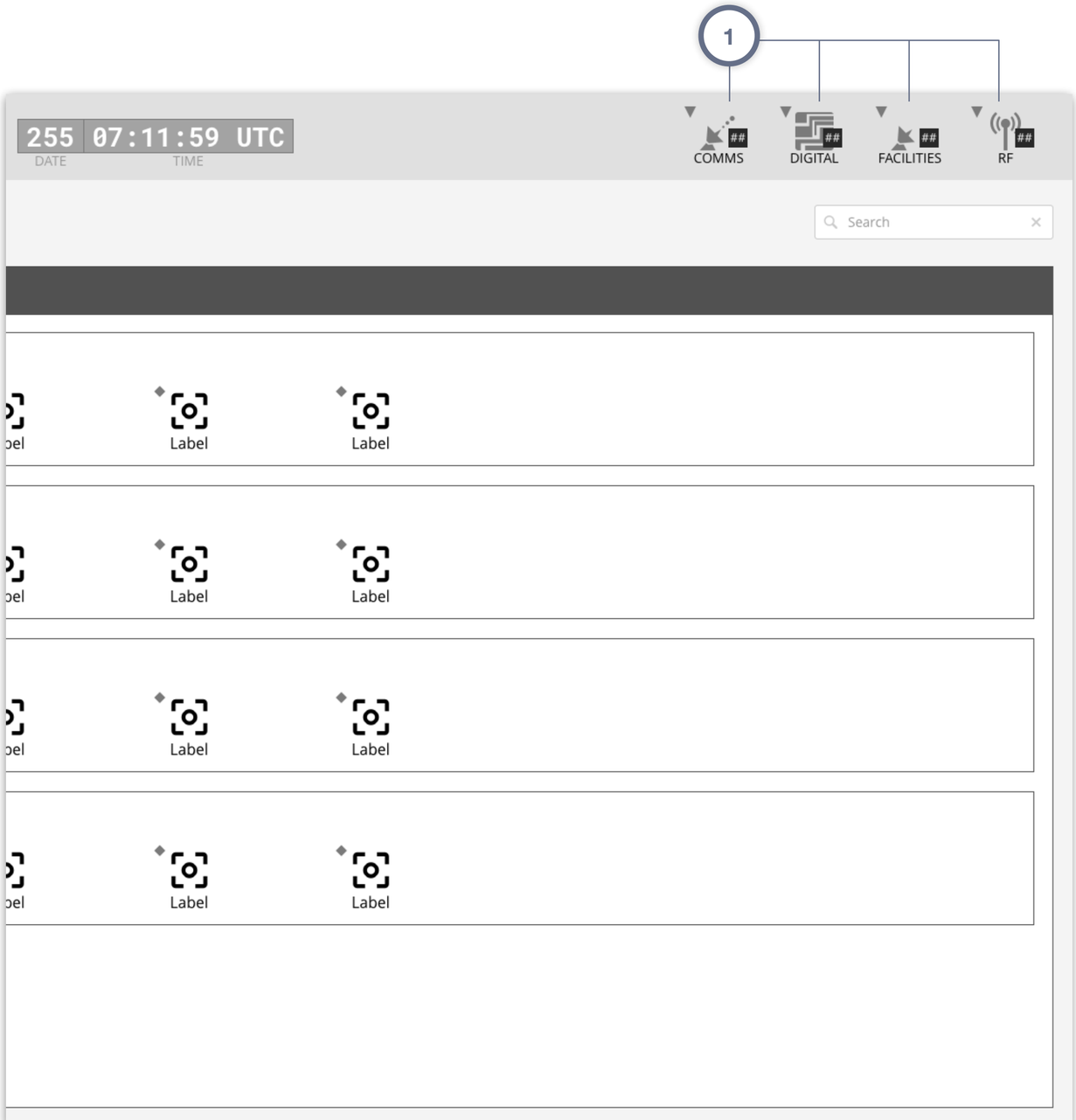
Functionality

The Global Monitoring Icons display the highest level of consolidated data along categories relevant to their application.

Each GRM application displays a different set of Global Monitoring Icons according to the primary use cases associated with the application.

Equipment Manager

1. **Software, Comms, Digital, Facilities, RF** - these categories of equipment and software provide the operator the status level (color) of each and a count of any associated alerts inside the badge. The number and taxonomy of these category names should be configured by each squadron at set up time.



Global - Monitoring Icons - Menu

Functionality

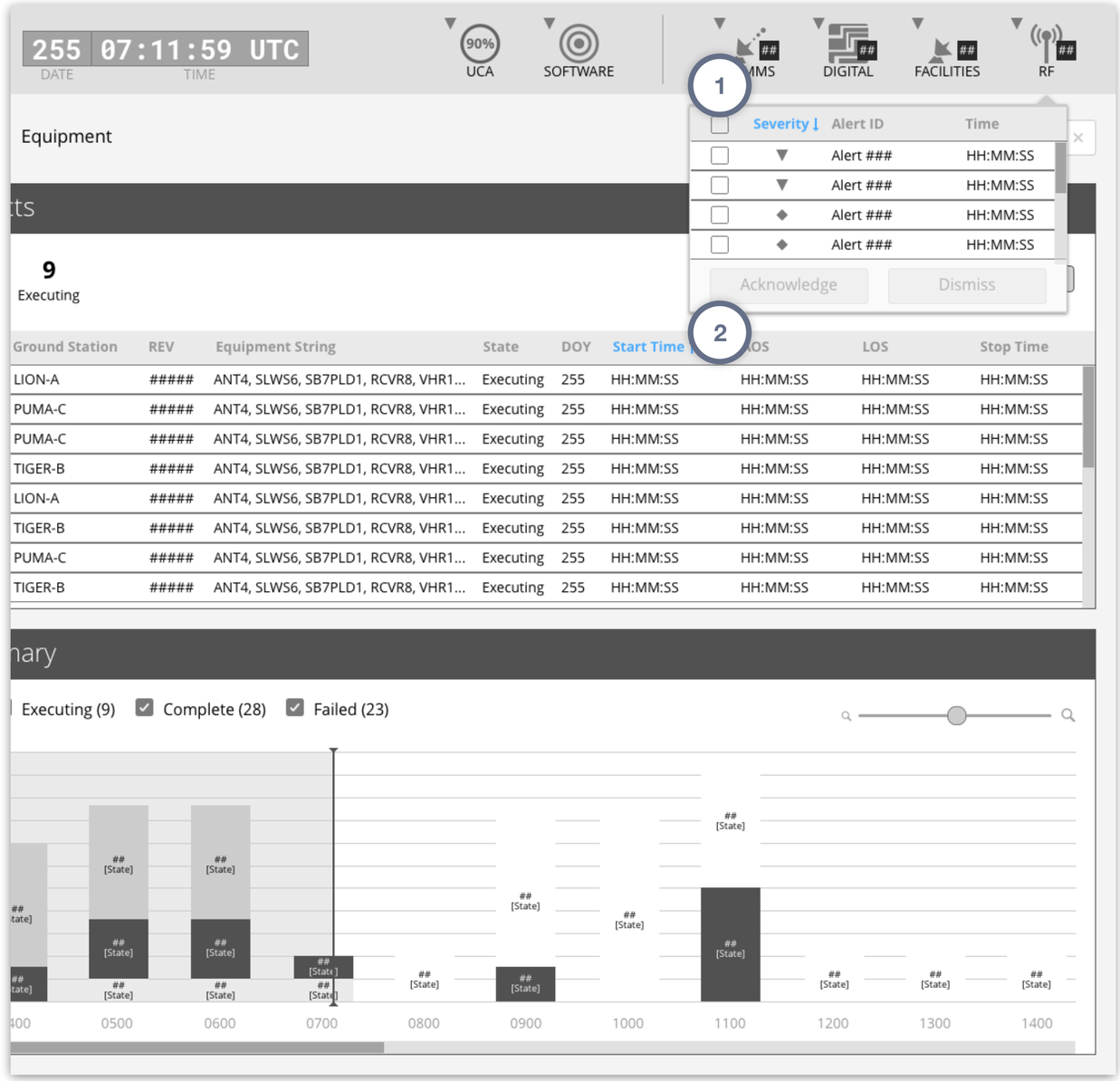
The Global Monitoring Icon menu providers the operator a list of alerts according to the category indicated by the Monitoring Icon.

Features & Interactions

1. **Severity Sort Order**
   Sorts alerts by highest to lowest severity.

2. **Acknowledge/Dismiss Buttons**
   Acknowledges or dismisses alerts.

   **Further functionality such as recalling dismissed alerts and denoting acknowledged alerts is to be determined.*

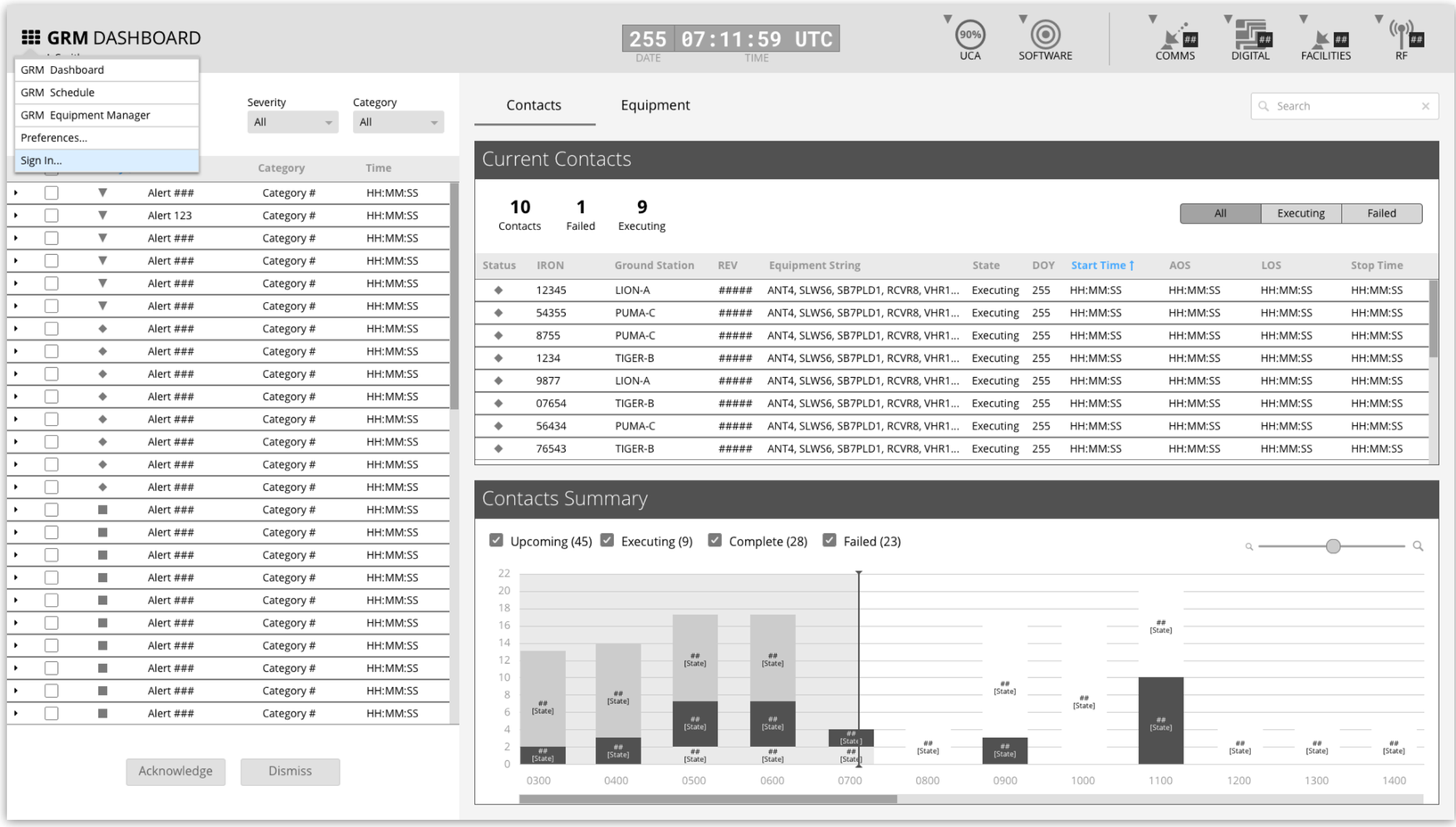


GRM Wireframes.pdf, page 36

Global - Sign In & Out

Functionality

The operator can sign in or out of the GRM App Suite through the App Switcher Menu, which is accessible in every application and screen by clicking the icon in the top left.

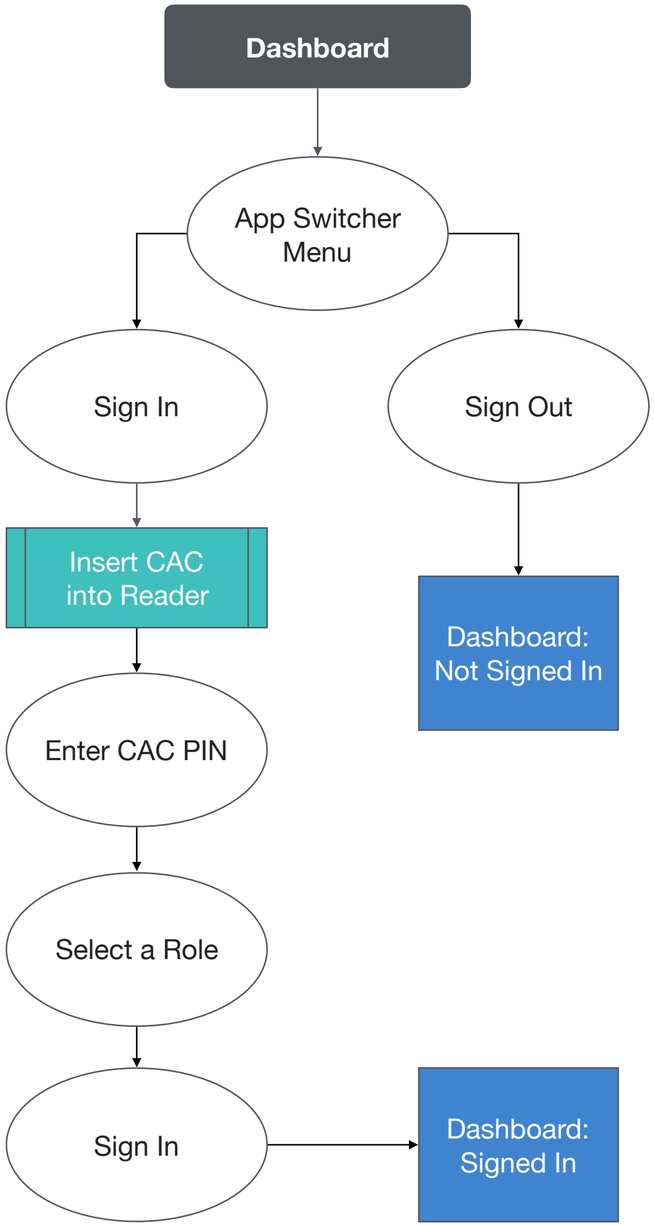


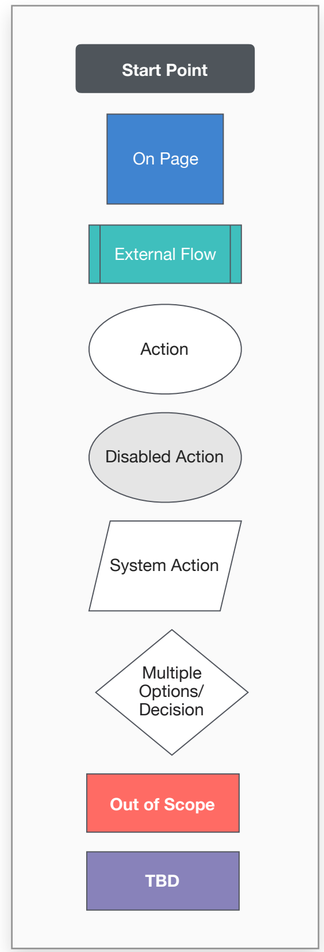
GRM Wireframes.pdf, page 7

Global - Sign In/Out Flow

This user flow shows the content and actions involved in signing in or out of GRM through the Dashboard. This flow is available to the operator in any of the three GRM applications via the App Switcher Menu.

The following pages in this document (20-21) provide a full description of each step alongside the correlating screen of the application.

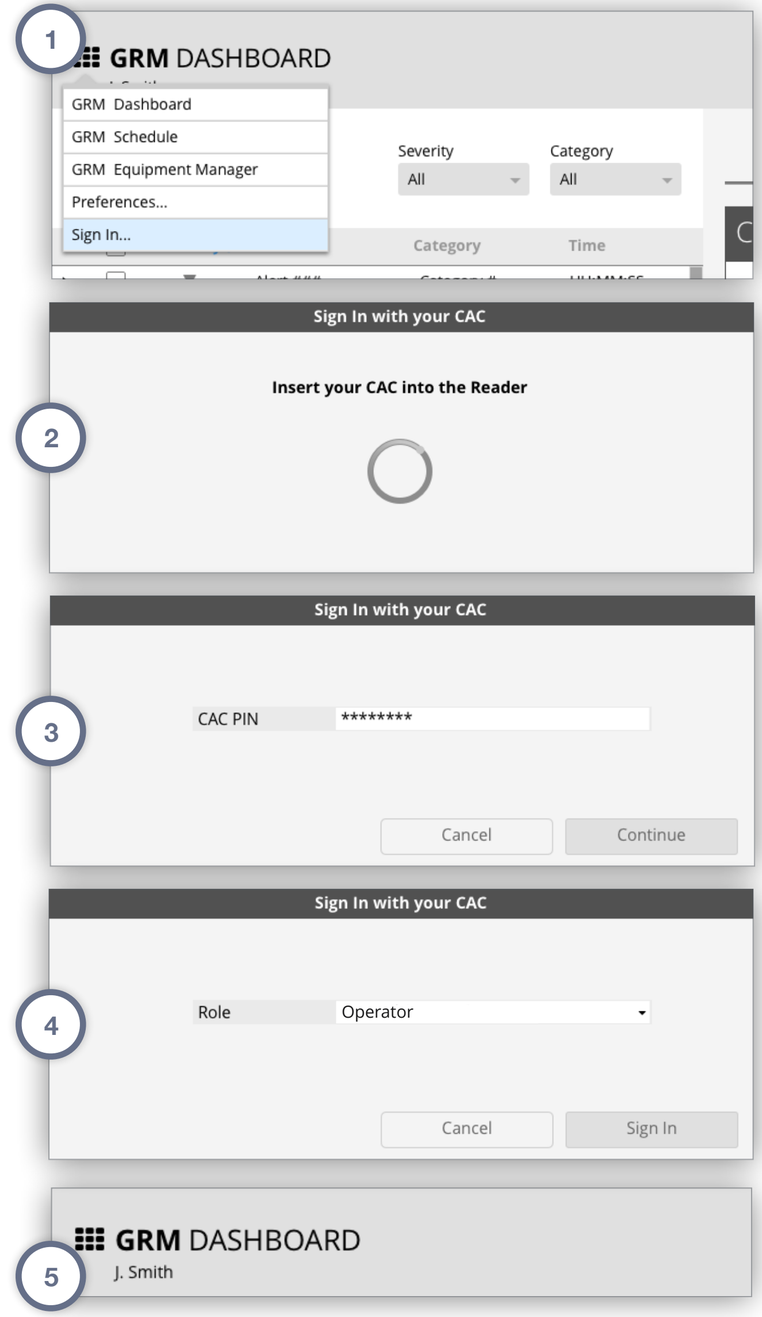




Global Components - Sign In Flow Steps

Steps

1. Click the App Switcher Menu, then click “Sign In.”
2. Insert a CAC into the Reader (external to the GRM Application Suite).
3. Enter a CAC PIN.
4. Select role, then click “Sign In.”
5. The operator name appears below the application title, indicating that they are signed in.



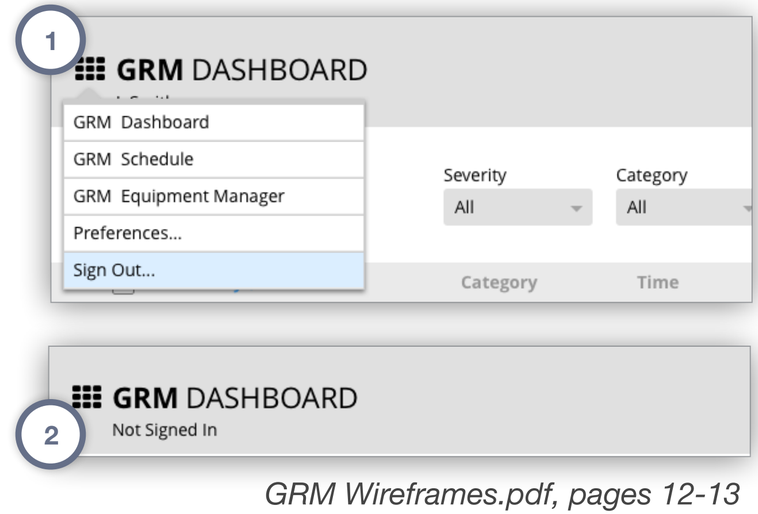
GRM Wireframes.pdf, pages 7-11

Global Components - Sign Out Flow Steps

Steps

1. Click the App Switcher Menu, then click “Sign Out.”

2. The operator name under the application title changes to “Not Signed In.”



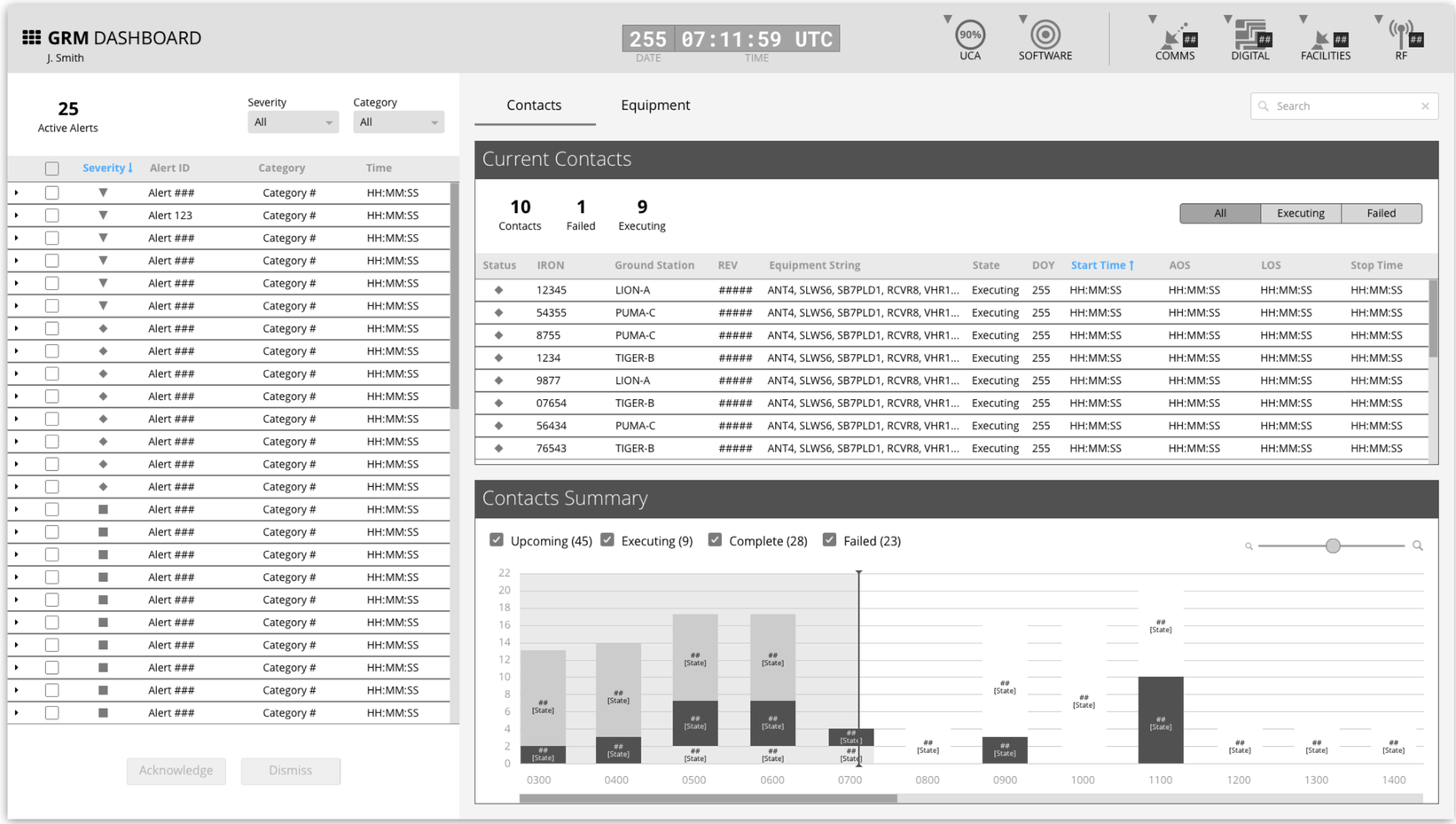
GRM Wireframes.pdf, pages 12-13

Dashboard

Dashboard Overview

The Dashboard application rolls up all information necessary for providing the operator the highest level of situational awareness.

In addition, it allows the operator to investigate alerts, modify contacts, and schedule maintenance jobs.



GRM Wireframes.pdf, page 15

Dashboard - Alerts

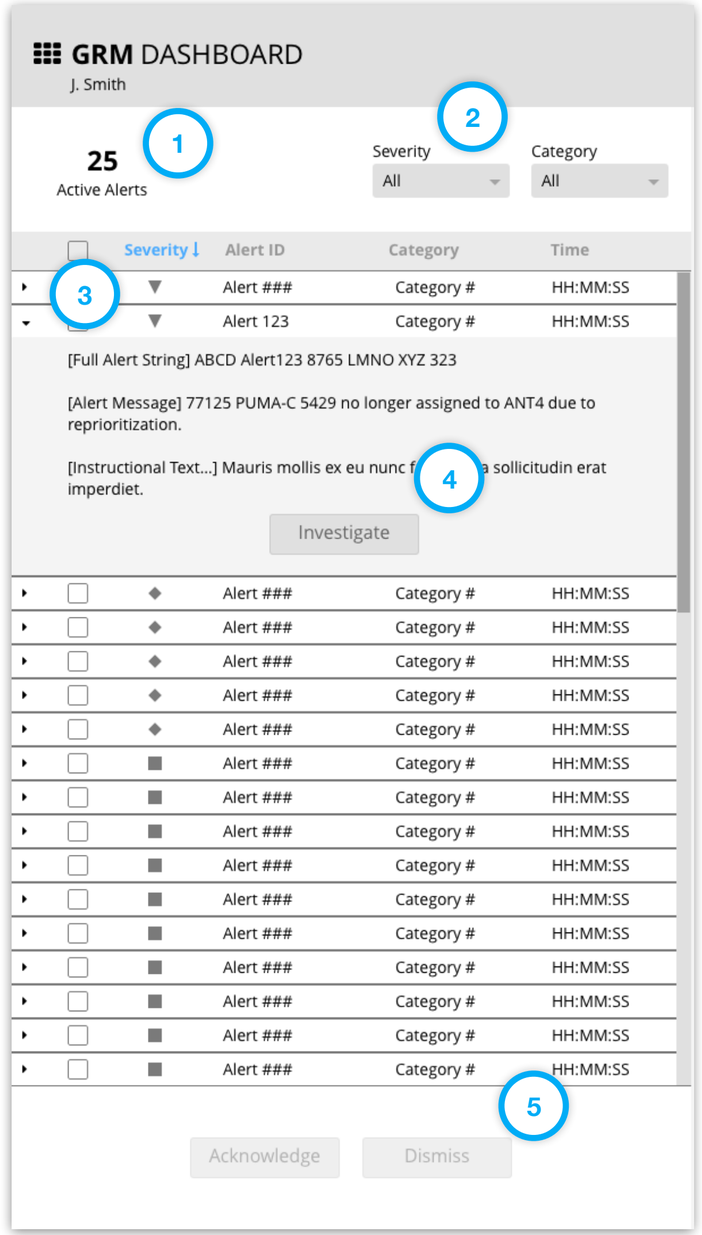
Functionality

The Alerts component houses a roll-up of system-wide alerts.

Features & Interactions

1. **Active Alert Aggregate Numbers**
   Shows number of active alerts at-a-glance.
2. **Filter Drop-downs**
   Filters alert list by severity and category.
3. **Expandable List Items**
   Expands to show alert details and Investigate button (if applicable).
4. **Investigate Button**
   Sends the operator to a page with full alert details and actions for resolving the alert.
5. **Acknowledge/Dismiss Buttons**
   Acknowledges or dismisses alerts.

   **Further functionality such as recalling dismissed alerts and denoting acknowledged alerts is to be determined.*



GRM Wireframes.pdf, page 21

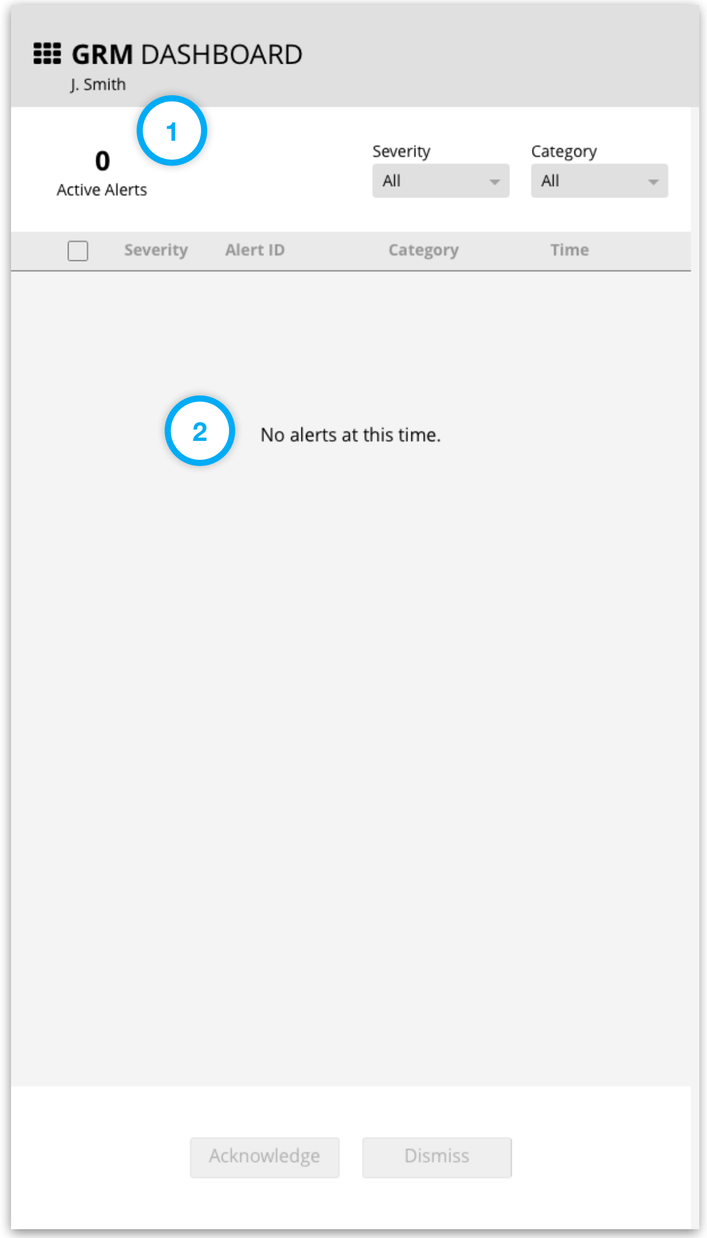
Dashboard - Alerts - Empty State

Functionality

Active Alerts empty state.

Features & Interactions

1. **Active Alert Aggregate Numbers**
   Shows number of active alerts at-a-glance.
2. **Messaging**
   Clear messaging is presented in the event no active alerts are present.



GRM Wireframes.pdf, page 17

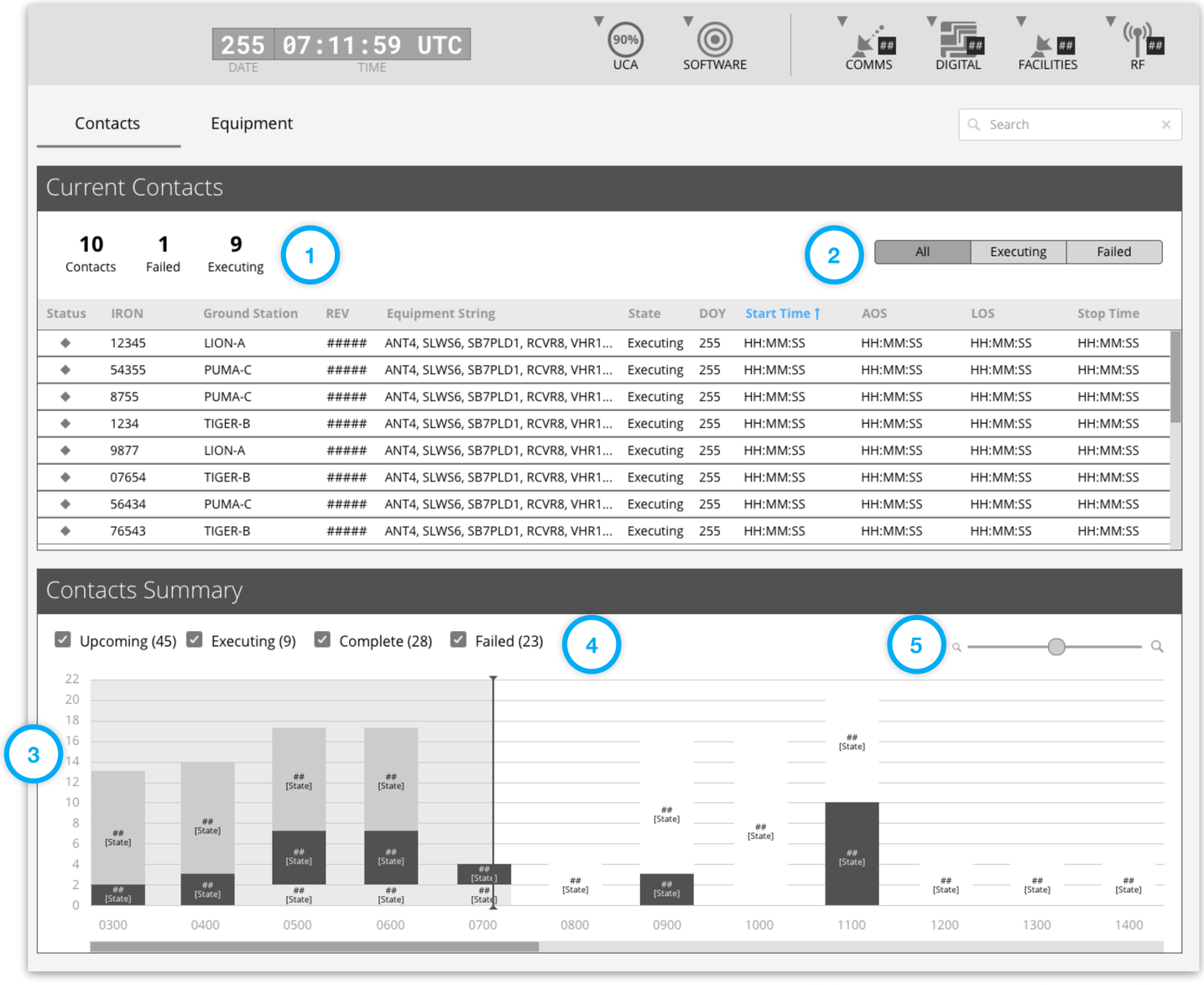
Dashboard - Contacts View

Functionality

The Contacts Tab consists of Current Contacts and the Contacts Summary sections. Operators can quickly see all executing contacts including any failures in the Current Contacts.

Features & Interactions

1. **Contacts Aggregate Numbers**
   Shows number of executing contacts at-a-glance.
2. **Segmented Button Filter**
   Filters Current Contacts by All, Executing, or Failed.
3. **Histogram**
   The y-axis measures contact counts, while the x-axis represents time.
4. **Histogram Filters**
   Filters may be applied to one, many or all of the Contact States; Upcoming, Executing, Complete, Failed.
5. **Zoom Control**
   To zoom in to the Histogram, drag the slider to the right.
   To zoom out of the Histogram, drag the slider to the left.



GRM Wireframes.pdf, page 15

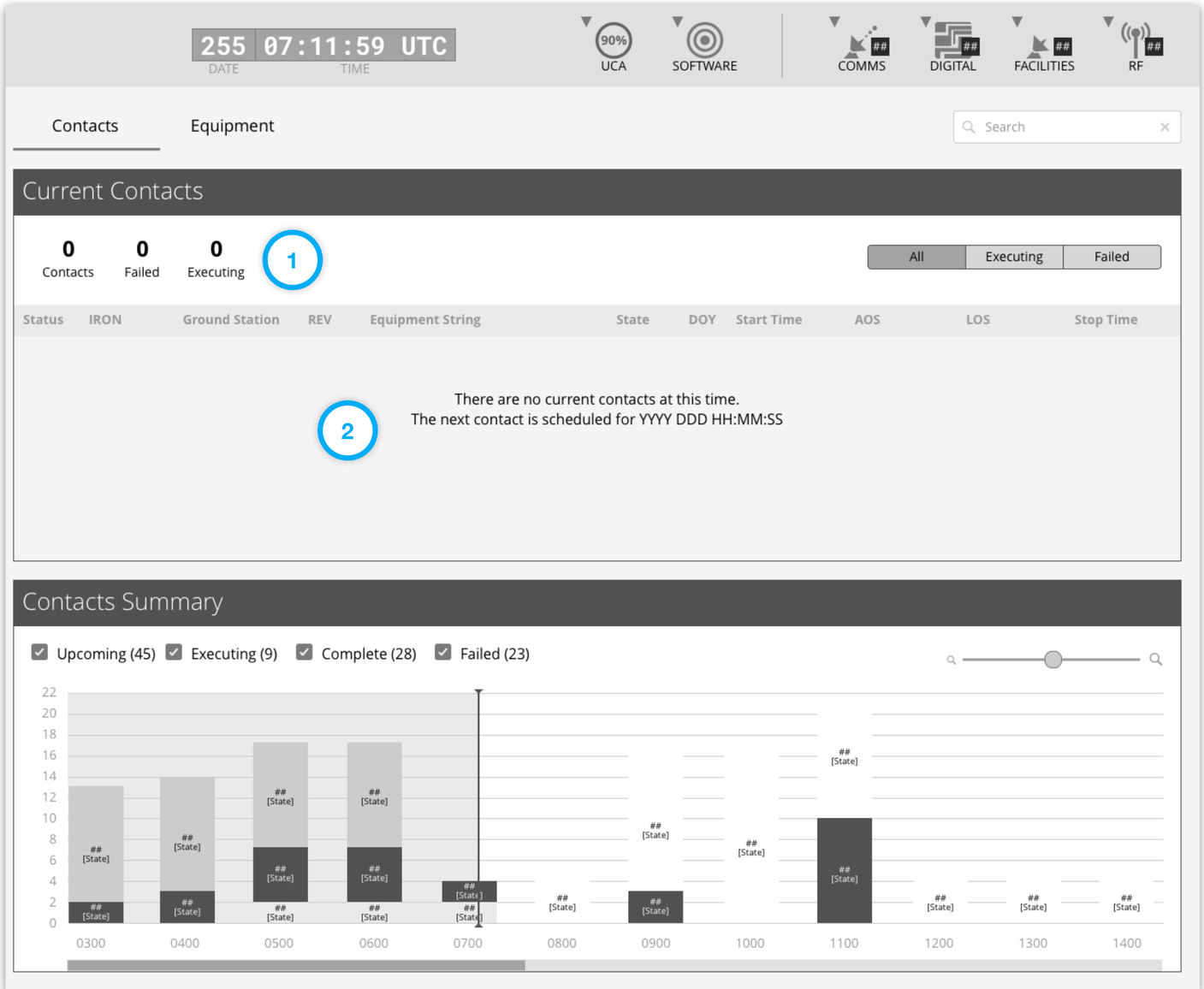
Dashboard - Contacts View - Empty State

Functionality

Current Contacts empty state.

Features & Interactions

1. **Contacts Aggregate Numbers**
   Shows number of executing contacts at-a-glance.
2. **Messaging**
   Clear messaging is presented in the event no contacts are currently executing.



GRM Wireframes.pdf, page 18

Dashboard - Equipment View

Functionality

The Equipment Tab consists of Current Equipment Status and Trending Equipment Status sections. Operators can quickly see equipment allocation and health across various categories; past, present and future.

Features & Interactions

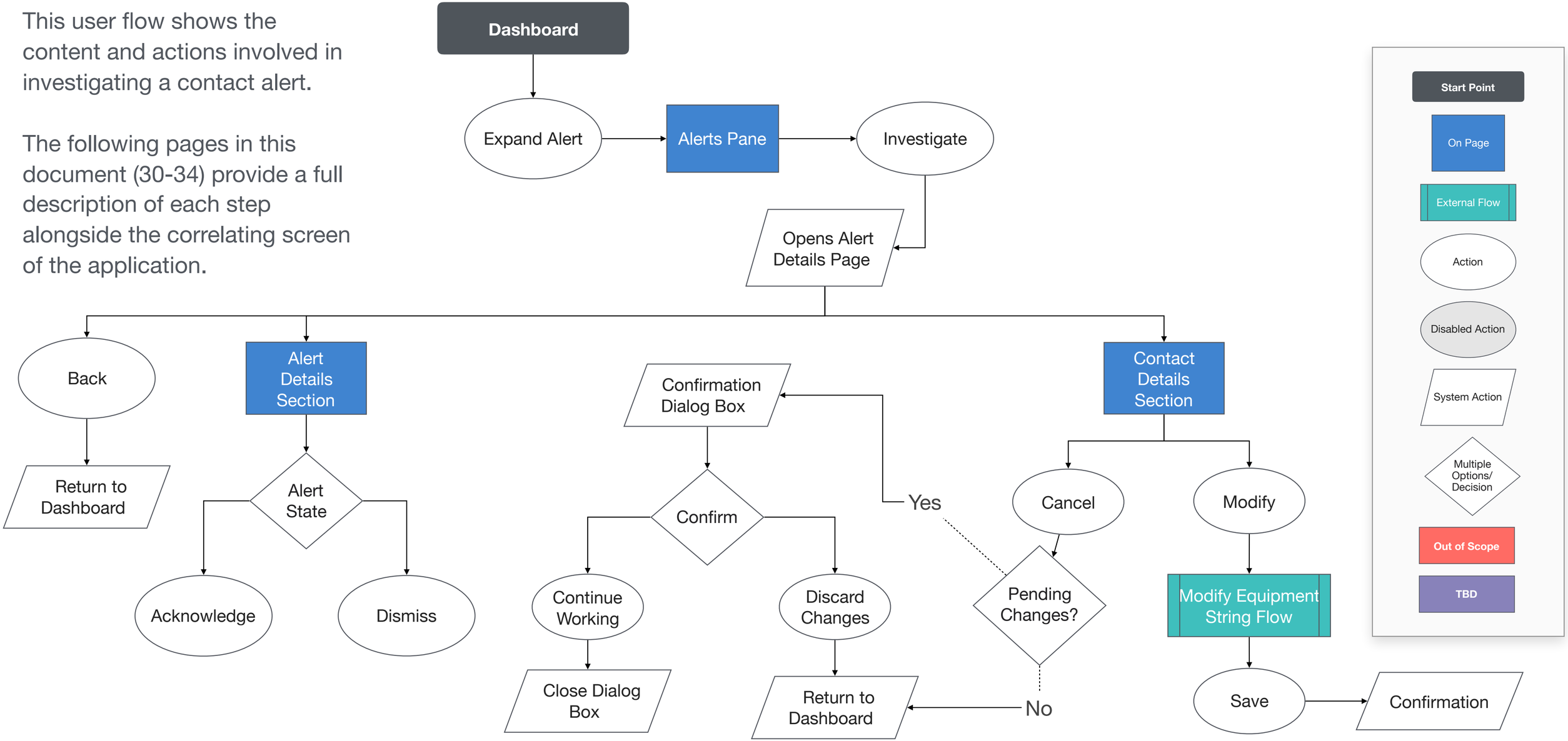
1. **Equipment Allocation**
   Shows percentage of usage across top line categories at-a-glance.
2. **Histogram**
   The y-axis measures percent of equipment in a given category allocated, while the x-axis represents time. A “Usage Threshold” value may be defined to identify equipment that exceeds this limit.
3. **Trending Equipment Status Filters**
   Filters may be applied to one, many or all of the equipment categories defined.
4. **Chart Details**
   On hover, details such as Category, Usage and Time are displayed in a tool tip.

GRM Wireframes.pdf, page 20

Dashboard - Investigate Contact Alert Flow

This user flow shows the content and actions involved in investigating a contact alert.

The following pages in this document (30-34) provide a full description of each step alongside the correlating screen of the application.



Dashboard - Investigate Contact Alert Flow

Step

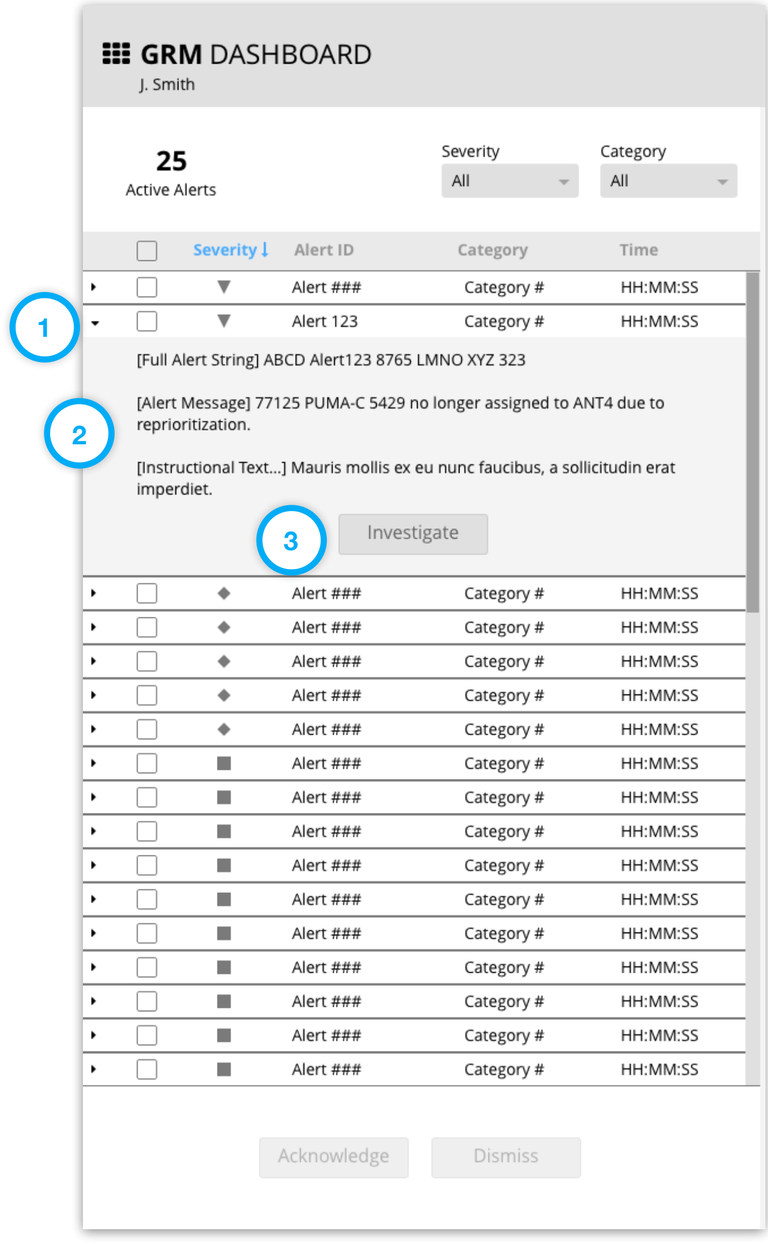
An operator is addressing an alert impacting a contact and clicks “Investigate” to troubleshoot.

Features & Interactions

1. **Expand Alert**
   Shows alert details and Investigate button.

2. **Review Alert Details**
   May contain: the full alert string to be cross referenced, an alert message to give the operator contextual meaning of what is being affected, and instructional text to guide the operator’s next steps.

3. **Investigate Button**
   Sends the operator to a page with full alert details and actions for resolving the alert.



GRM Wireframes.pdf, page 21

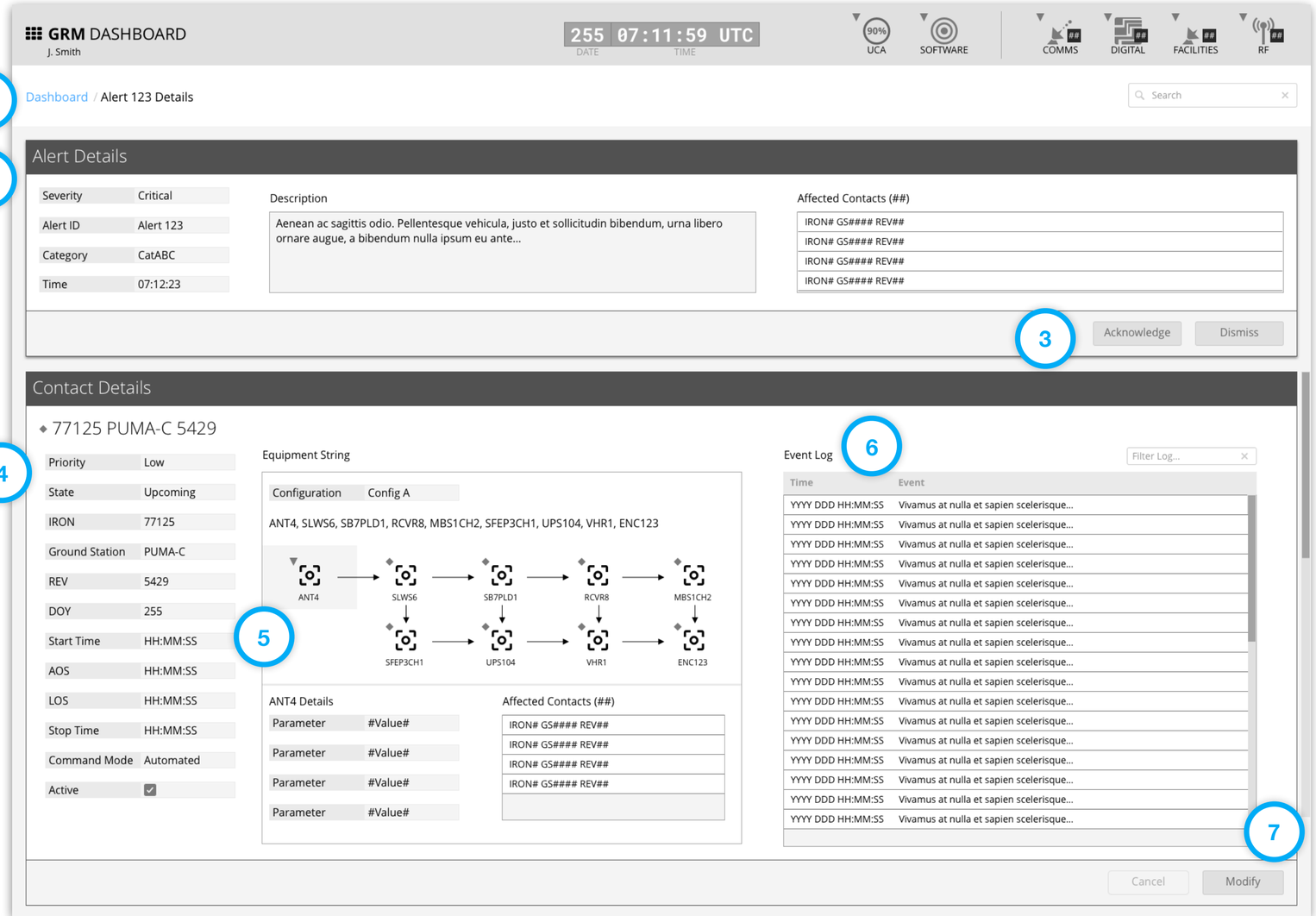
Dashboard - Investigate Contact Alert Flow

Step

View full Alert and Contact details, click “Modify.”

Features & Interactions

1. Breadcrumb navigation will return user to the Dashboard.
2. Additional alert details are provided.
3. Operator may Acknowledge or Dismiss the alert at their discretion.
4. Contact details are displayed to give operator insight on what contact is being affected.
5. The equipment string indicates that ANT4 is in a critical status for this contact.
6. The Event Log provides data on what events led up to this alert.
7. Modify puts the contact in an editable mode that allows the operator to resolve the issue.



GRM Wireframes.pdf, page 22

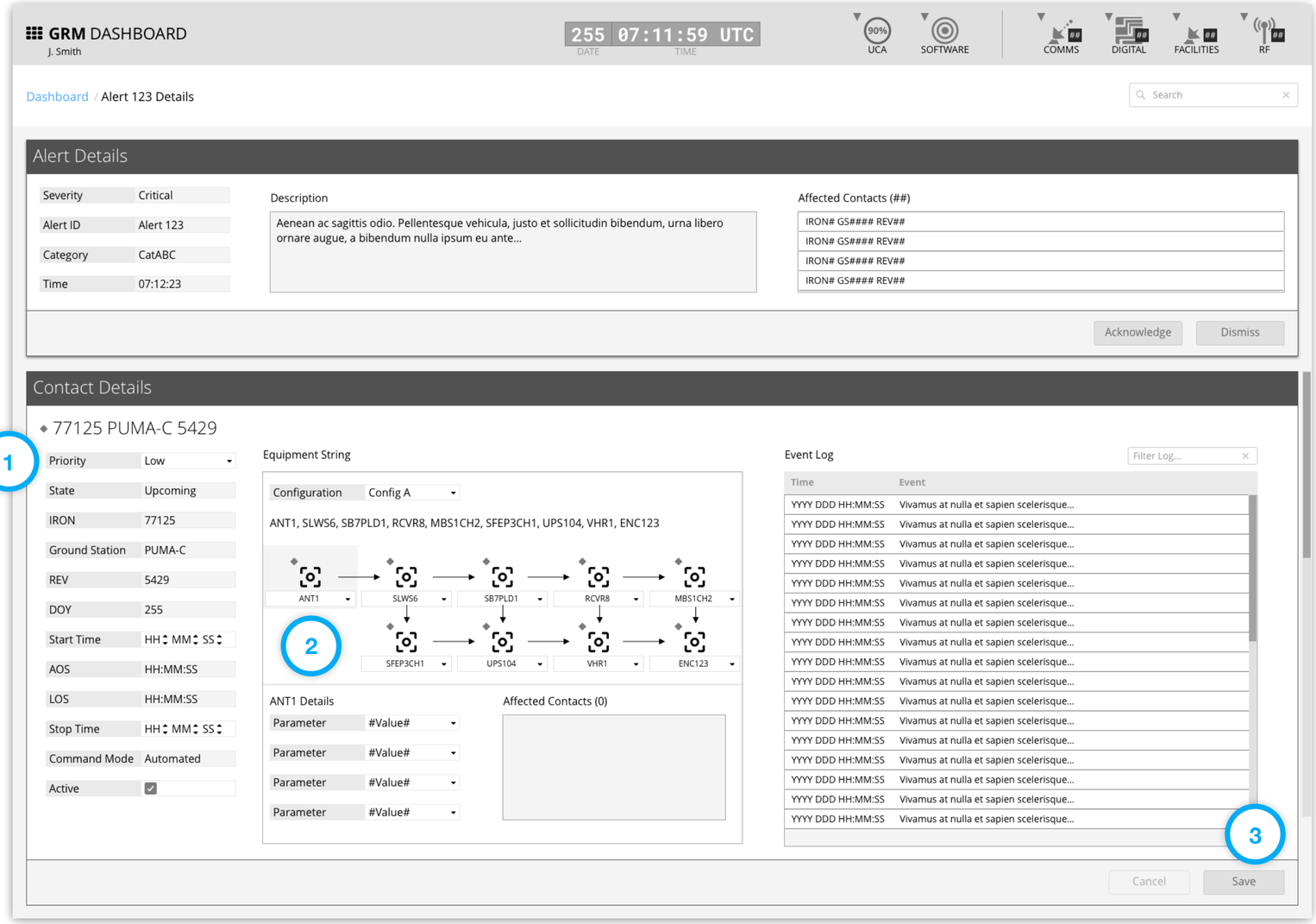
Dashboard - Investigate Contact Alert Flow

Step

Select an alternate resource, click “Save.”

Features & Interactions

1. Any contact fields that were modified display the appropriate form element.
2. The operator was able to select another available antenna, “ANT1” from a dropdown list.
3. To submit these changes, the operator clicks the “Save” button.



GRM Wireframes.pdf, page 23

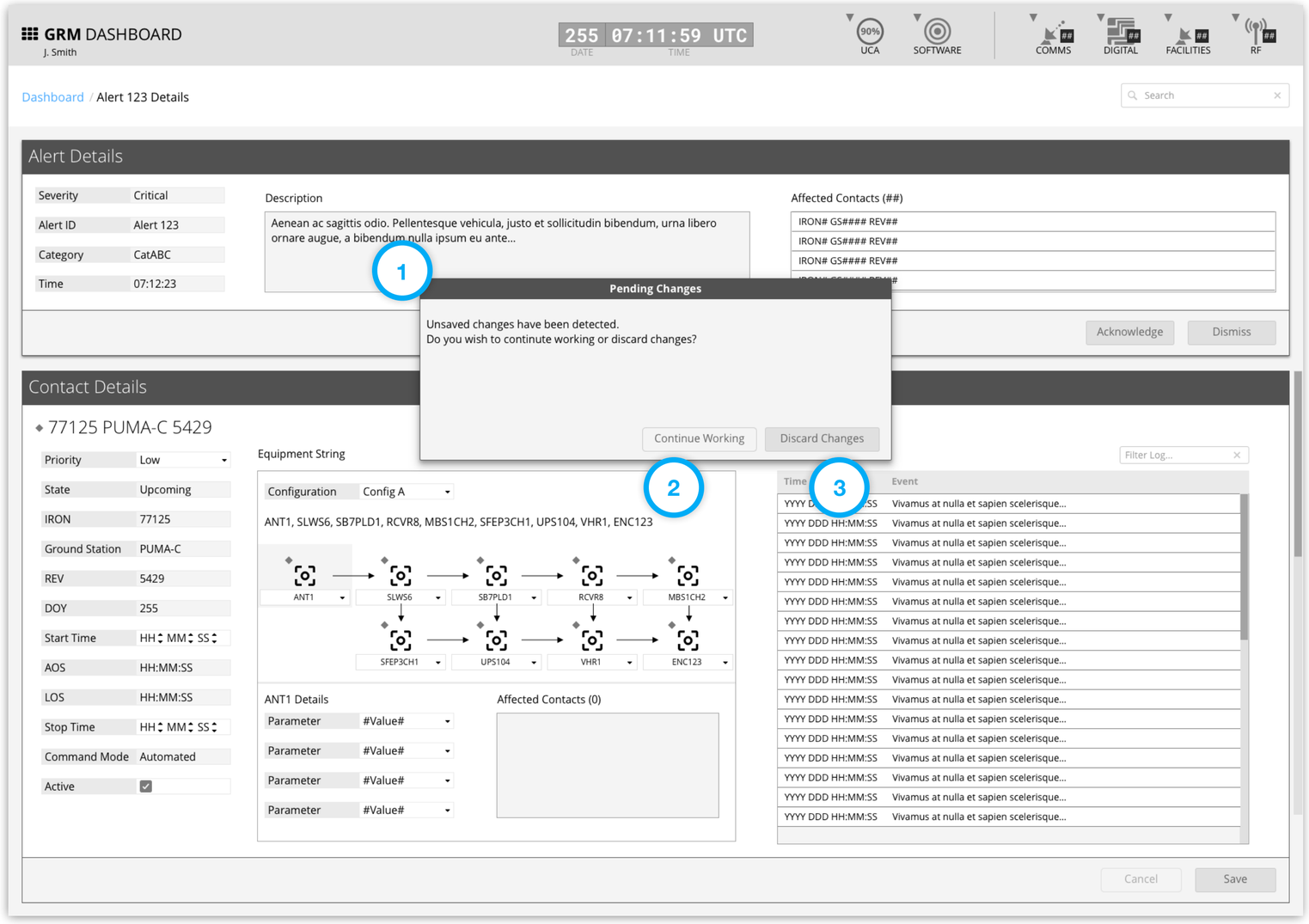
Dashboard - Investigate Contact Alert Flow

Step

If attempting to navigate away from an incomplete form, the operator must choose to discard changes or continue working.

Features & Interactions

1. A confirmation message is displayed in a dialog box.
2. Selecting “Continue Working” returns the operator back to the editable view.
3. Selecting “Discard Changes” reverts any edits to the last saved states and navigates the operator as requested.



GRM Wireframes.pdf, page 24

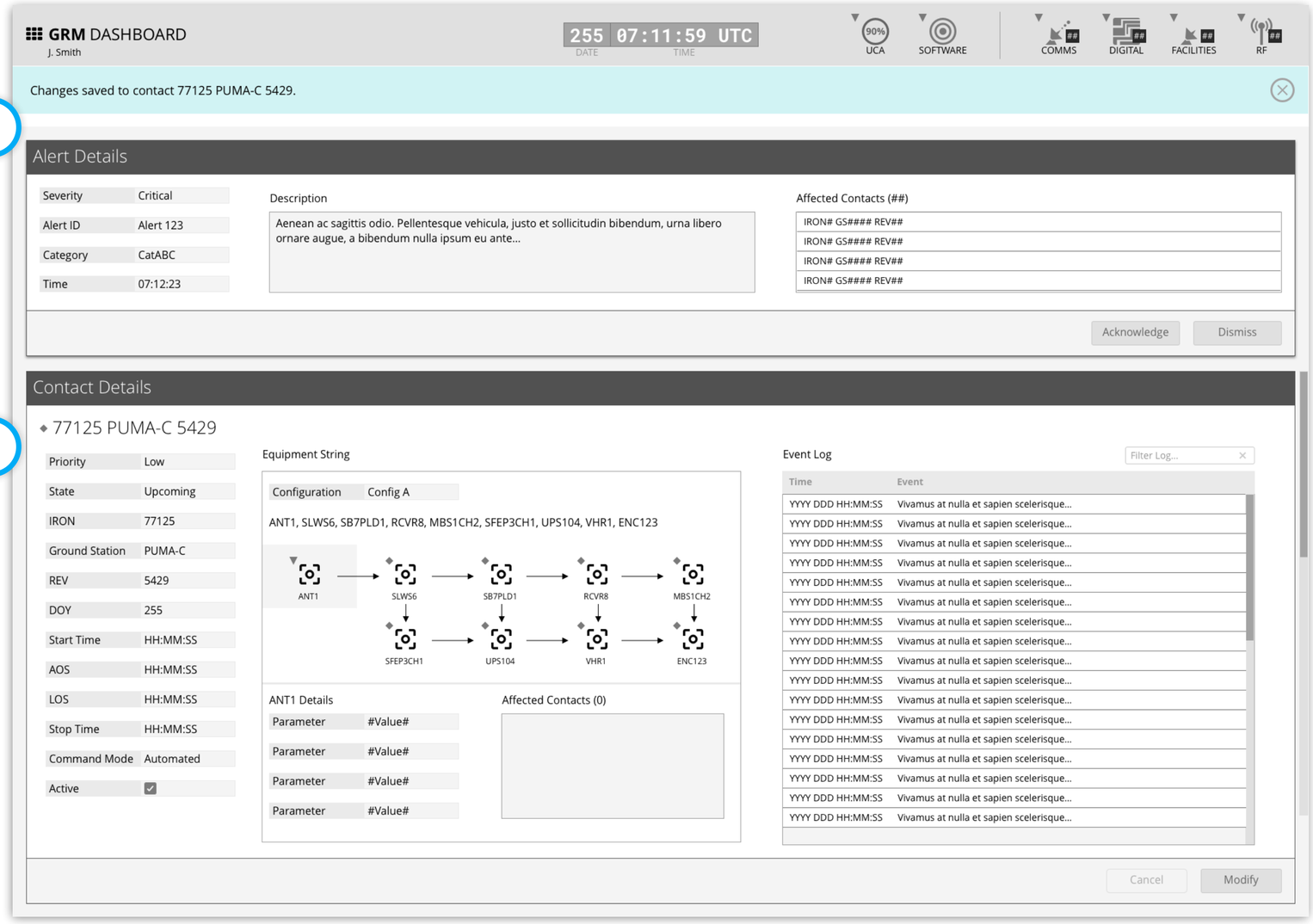
Dashboard - Investigate Contact Alert Flow

Step

After clicking “Save”, a Notification Banner displays showing that changes have been saved.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar indicating which contact has been changed. The operator can dismiss the banner by clicking the “X” button on the right.
2. Contact details return back to a read-only state.

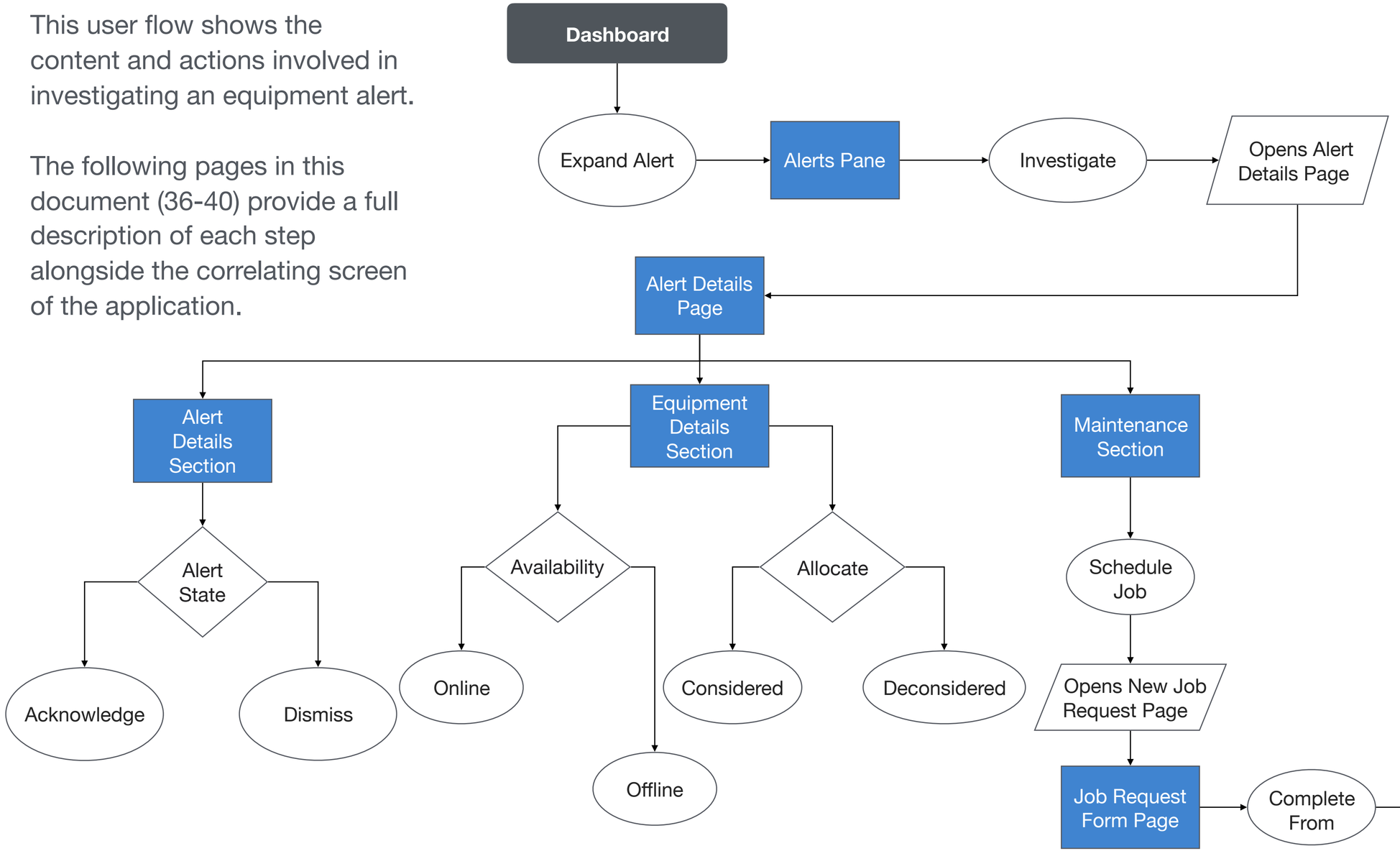


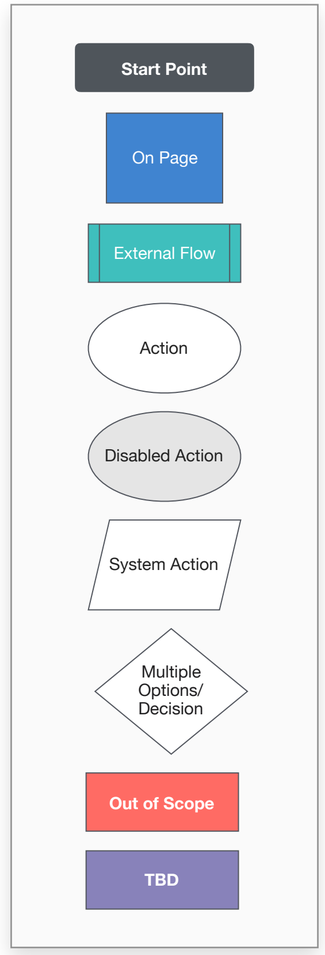
GRM Wireframes.pdf, page 25

Dashboard - Investigate Equipment Alert Flow

This user flow shows the content and actions involved in investigating an equipment alert.

The following pages in this document (36-40) provide a full description of each step alongside the correlating screen of the application.





Dashboard - Investigate Equipment Alert Flow

Step

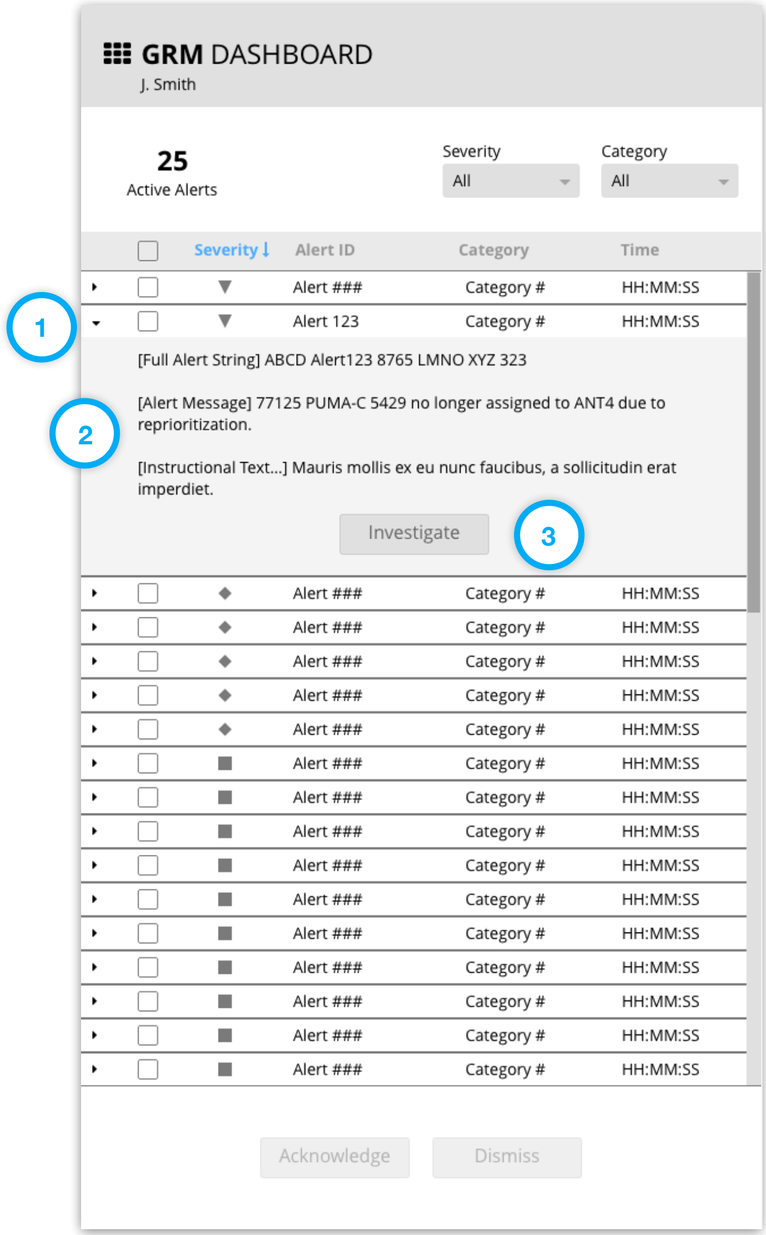
An operator is addressing an alert impacting equipment and clicks “Investigate” to troubleshoot.

Features & Interactions

1. **Expand Alert**
   Shows alert details and Investigate button.

2. **Review Alert Details**
   May contain: the full alert string to be cross referenced, an alert message to give the operator contextual meaning of what is being affected, and instructional text to guide the operator’s next steps.

3. **Investigate Button**
   Sends the operator to a page with full alert details and actions for resolving the alert.



GRM Wireframes.pdf, page 21

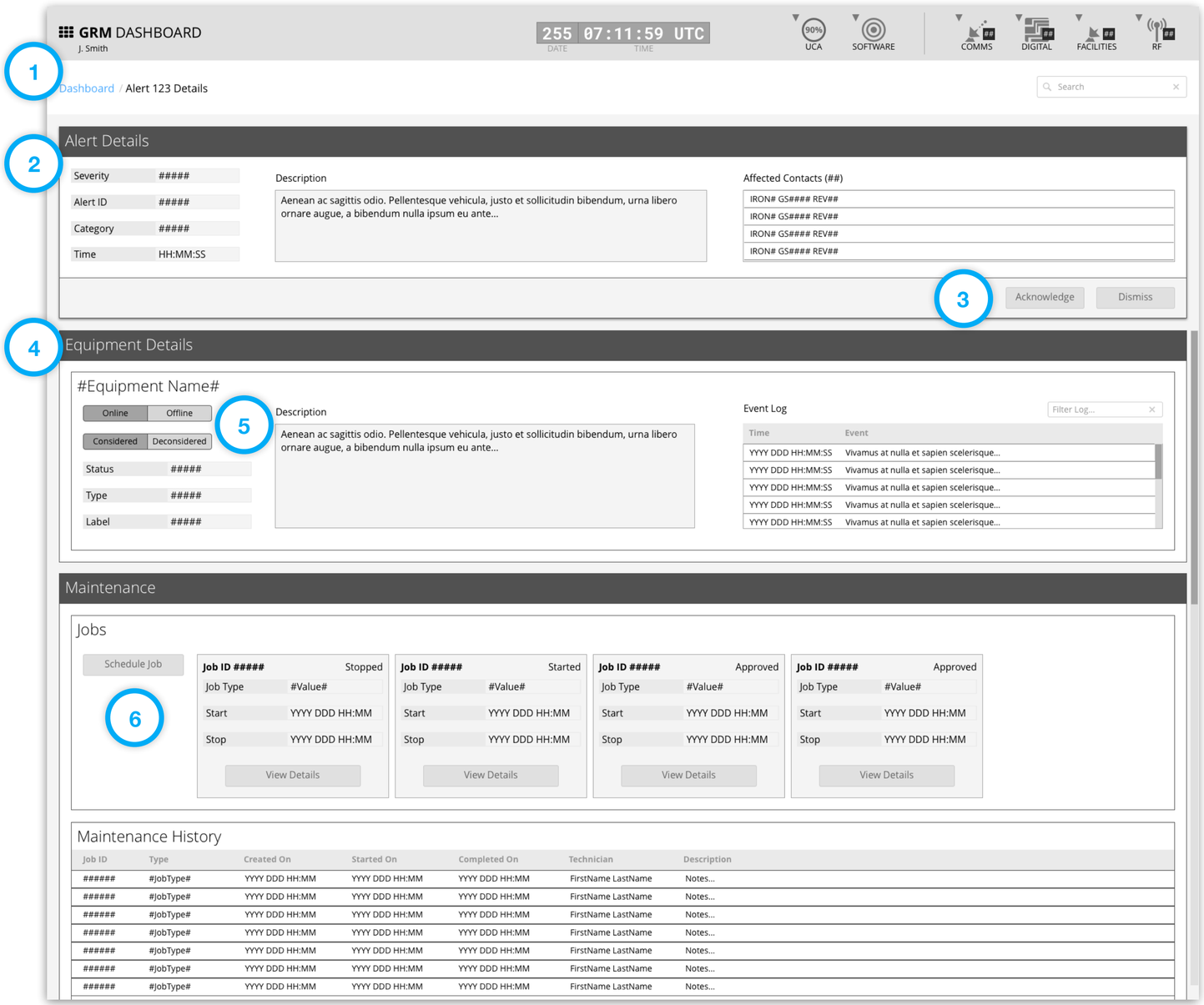
Dashboard - Investigate Equipment Alert Flow

Step

View full Alert and Equipment details, click “Schedule Job.”

Features & Interactions

1. Breadcrumb navigation will return user to the Dashboard.
2. Additional alert details are provided.
3. Operator may Acknowledge or Dismiss the alert at their discretion.
4. Equipment details are displayed to give operator insight on the equipment.
5. Equipment may be taken offline or deconsidered depending on the alert.
6. If determined, maintenance may be scheduled by selecting “Schedule Job.”



GRM Wireframes.pdf, page 26

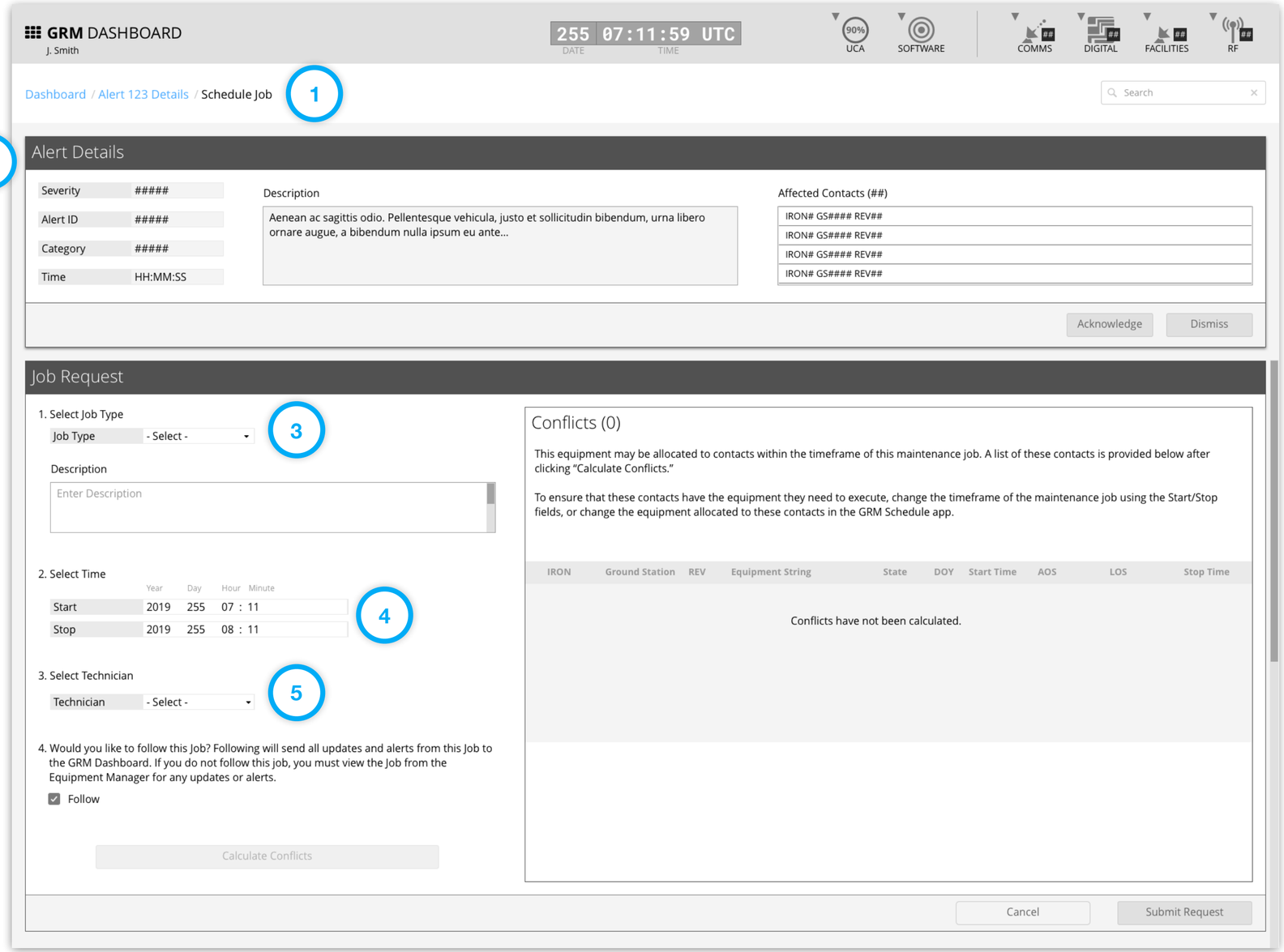
Dashboard - Investigate Equipment Alert Flow

Step

Complete the form for scheduling a maintenance job, then click “Submit Request.”

Features & Interactions

1. Breadcrumb navigation will return user to the Dashboard.
2. Alert details are displayed for context.
3. Select a Job Type, then provide any additional clarification in the Description field. The options available in this list should be configured by each squadron at set up time.
4. Select a time window for the job to be completed within. The equipment will be taken out of the resource pool during this window.
5. Select a Technician. The options available in this list should be configured by each squadron at set up time.



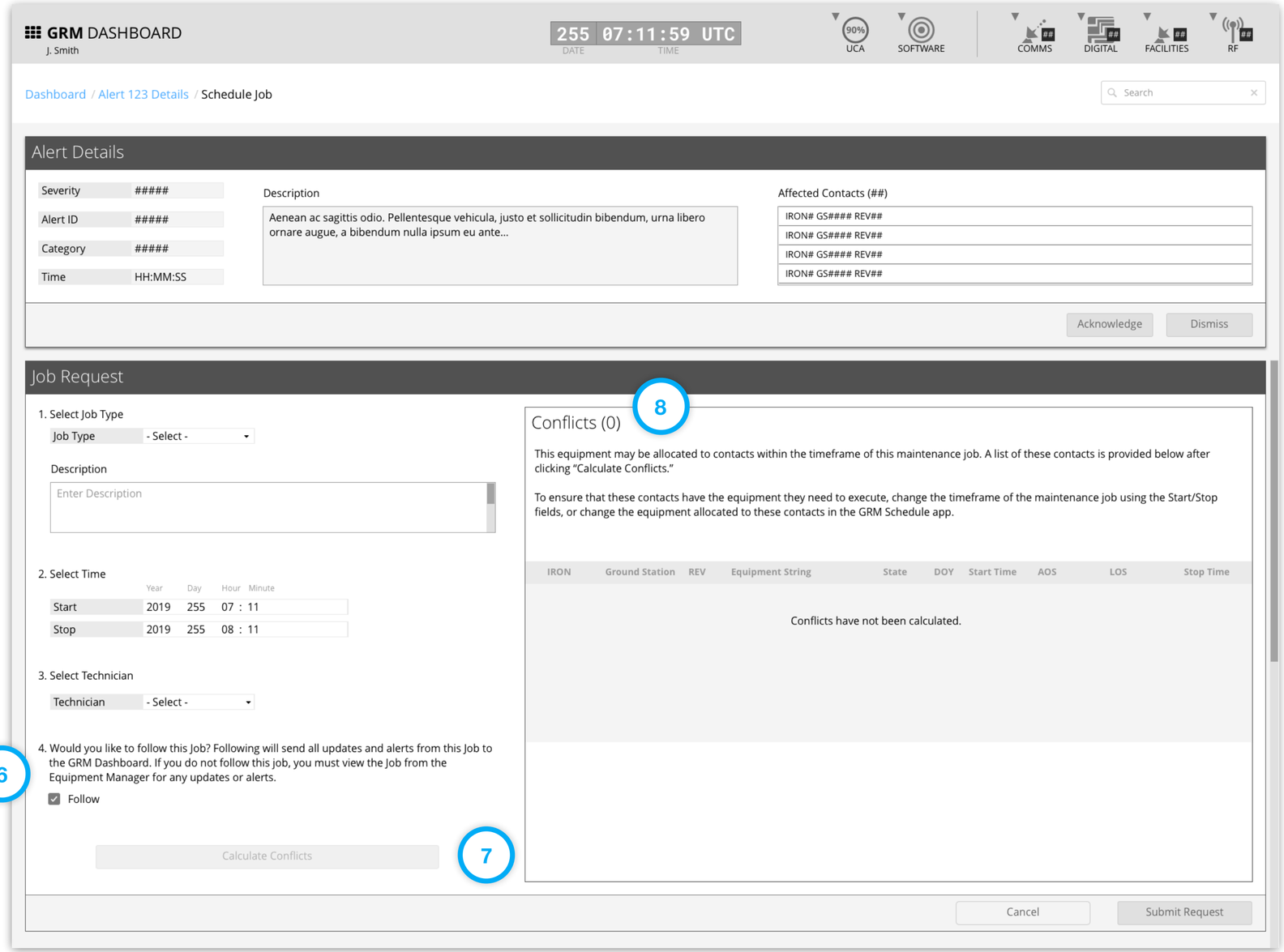
Dashboard - Investigate Equipment Alert Flow (Continued)

Step

Complete the form for scheduling a maintenance job, then click “Submit Request.” (continued)

Features & Interactions

6. Indicate whether to “Follow” this job. Following ensures that any alerts related to this job surface in the alerts area of the Dashboard application.
7. The “Submit Request” button will be disabled until the operator clicks “Calculate Conflicts.” This generates a list of contacts that will not execute due to the time window of this job, unless they are allocated different equipment.
8. A list of contacts affected by this job appears here. To resolve conflicts, the operator can either change the fields under “Select Time”, then regenerate this list by clicking “Calculate Conflicts” again, or by changing the equipment allocated to these contacts in the GRM Schedule application.



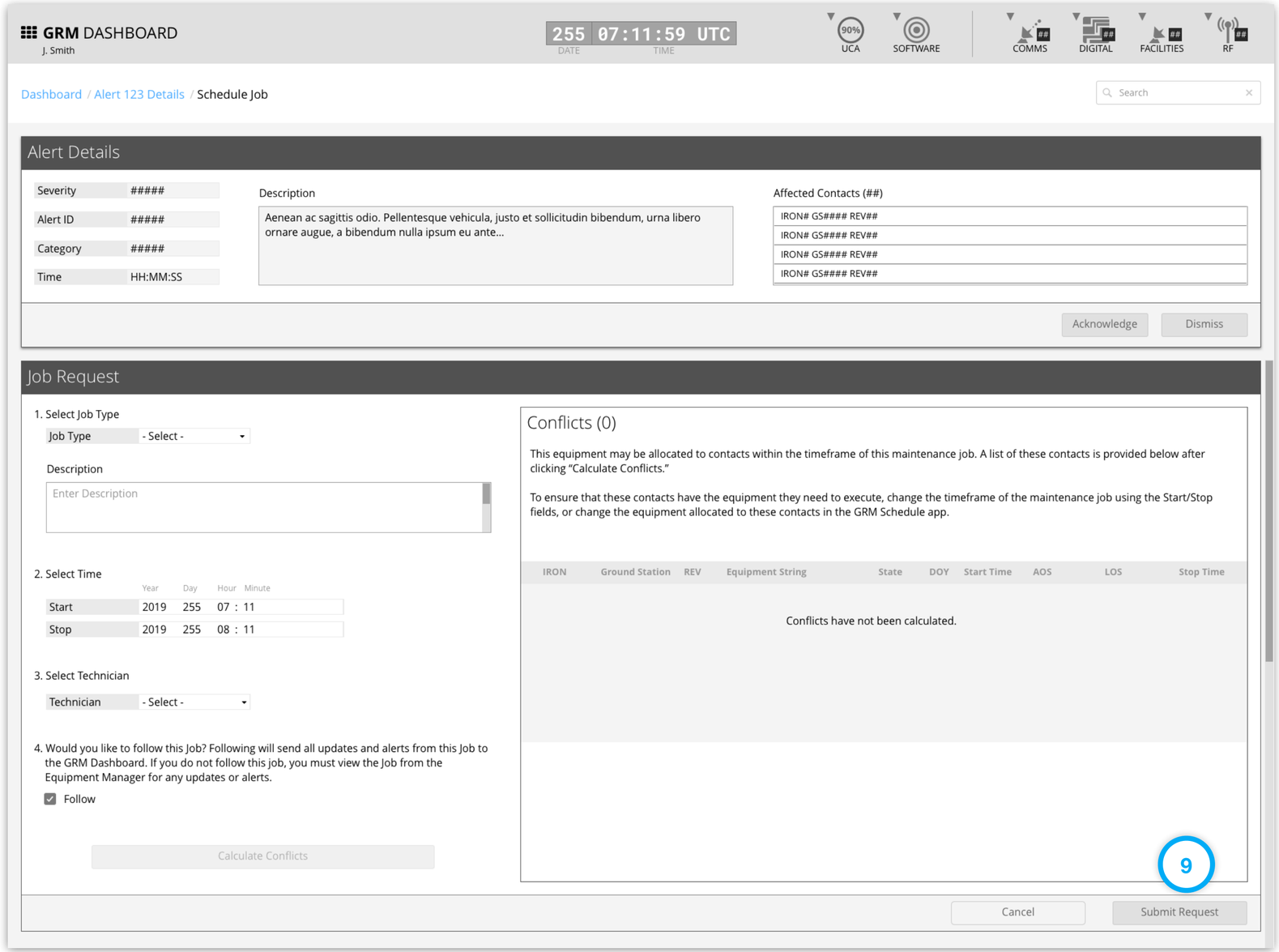
Dashboard - Investigate Equipment Alert Flow (Continued)

Step

Complete the form for scheduling a maintenance job, then click “Submit Request.” (continued)

Features & Interactions

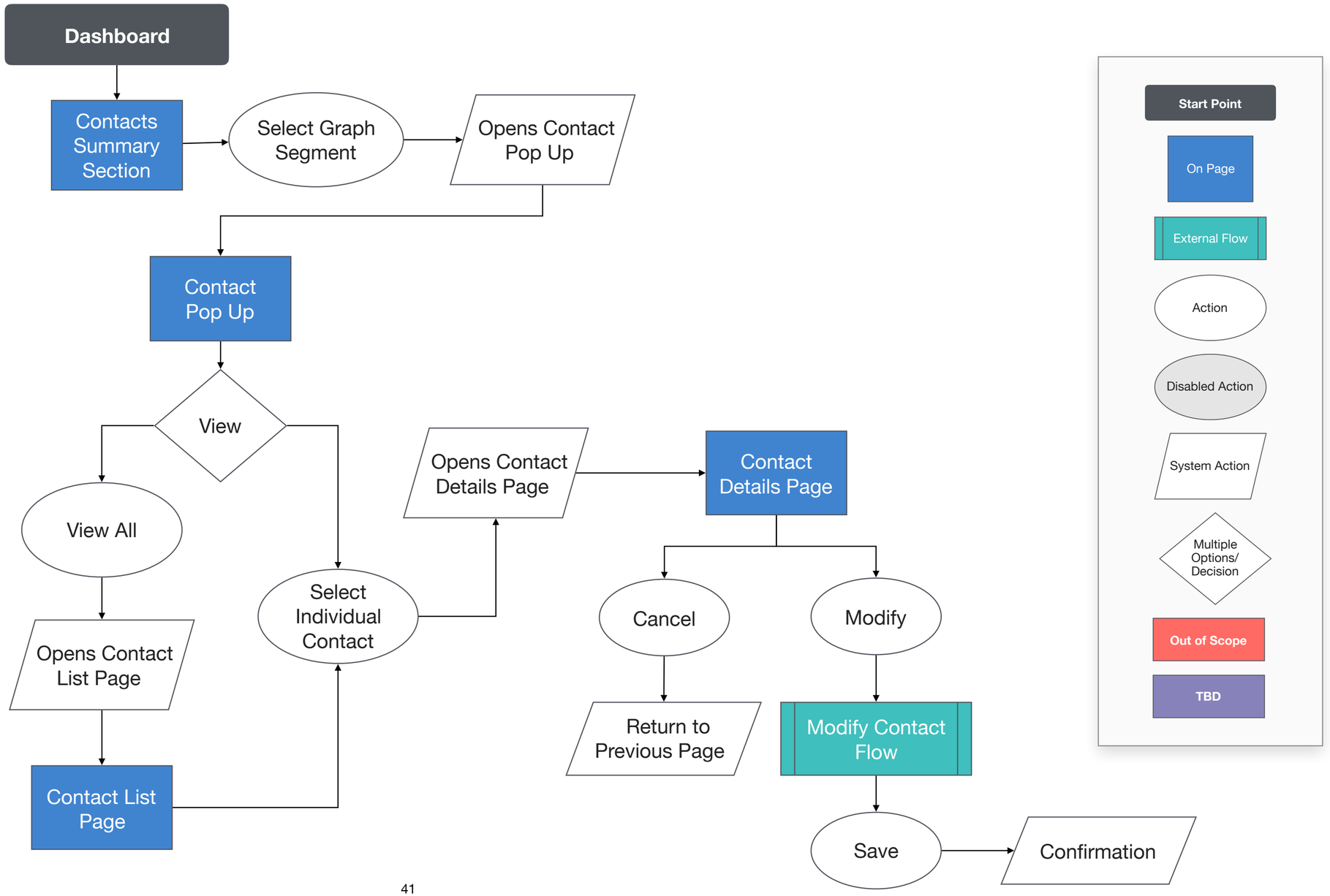
9. Submit Request is selected to schedule the maintenance job and operator is returned to the Alert Details page.



Dashboard - Contacts Summary Flow

This user flow shows the content and actions involved in the drill down of the Contacts Summary.

The following pages in this document (42-46) provide a full description of each step alongside the correlating screen of the App.



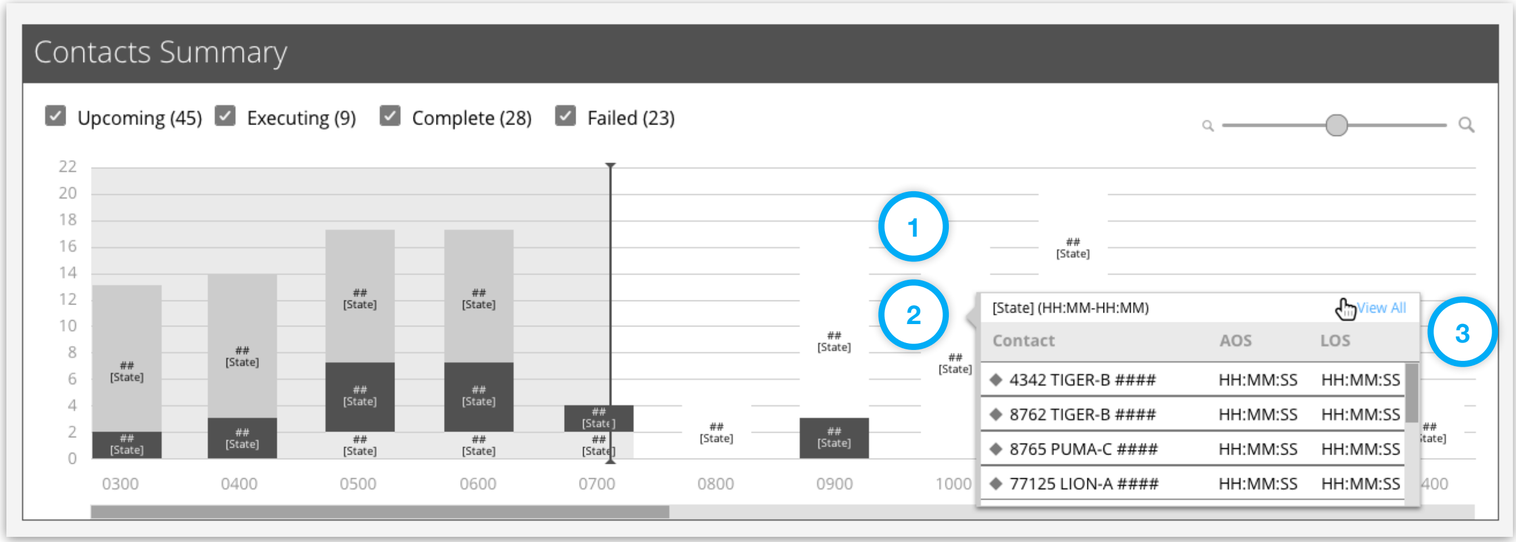
Dashboard - Contacts Summary Flow (View All)

Step

Click a segment of a bar in the graph, then click “View All” from within the pop up.

Features & Interactions

1. The number of contacts and contact state are labeled for that specific graph segment.
2. The click action of a graph segment displays a pop up for that segment.
3. Clicking “View All” sends the operator to a page with a full list of contacts for that segment.



GRM Wireframes.pdf, page 31

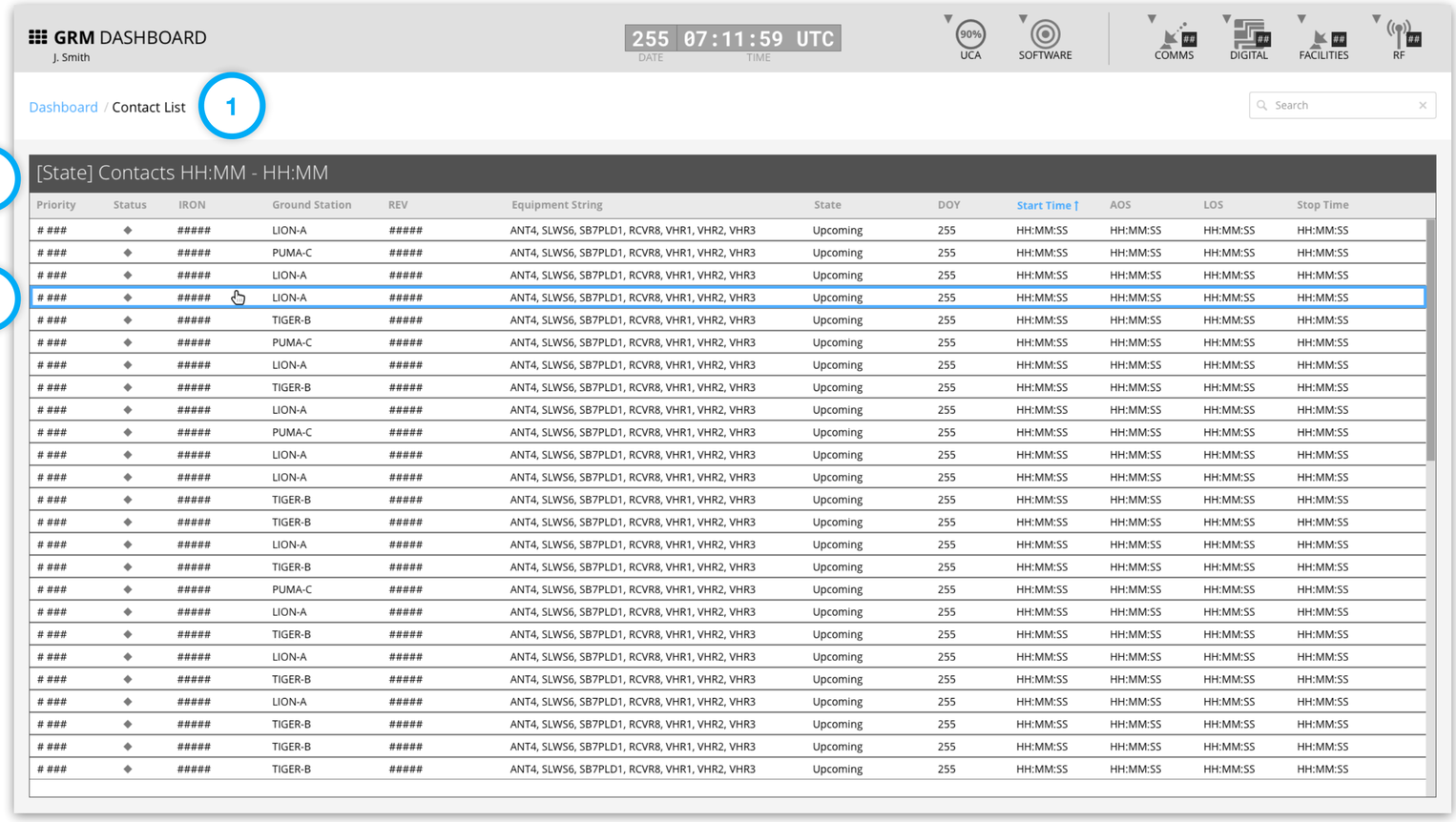
Dashboard - Contacts Summary Flow (View All)

Step

View the list of contacts according to the time block and associated state clicked in the graph, then click an individual contact to view full details.

Features & Interactions

1. Breadcrumb navigation will return user to the Dashboard.
2. Contact list displays contacts in the state and time period from the segment selected.
3. Clicking an individual contact sends the operator to a page with that contact's details.



GRM Wireframes.pdf, page 32

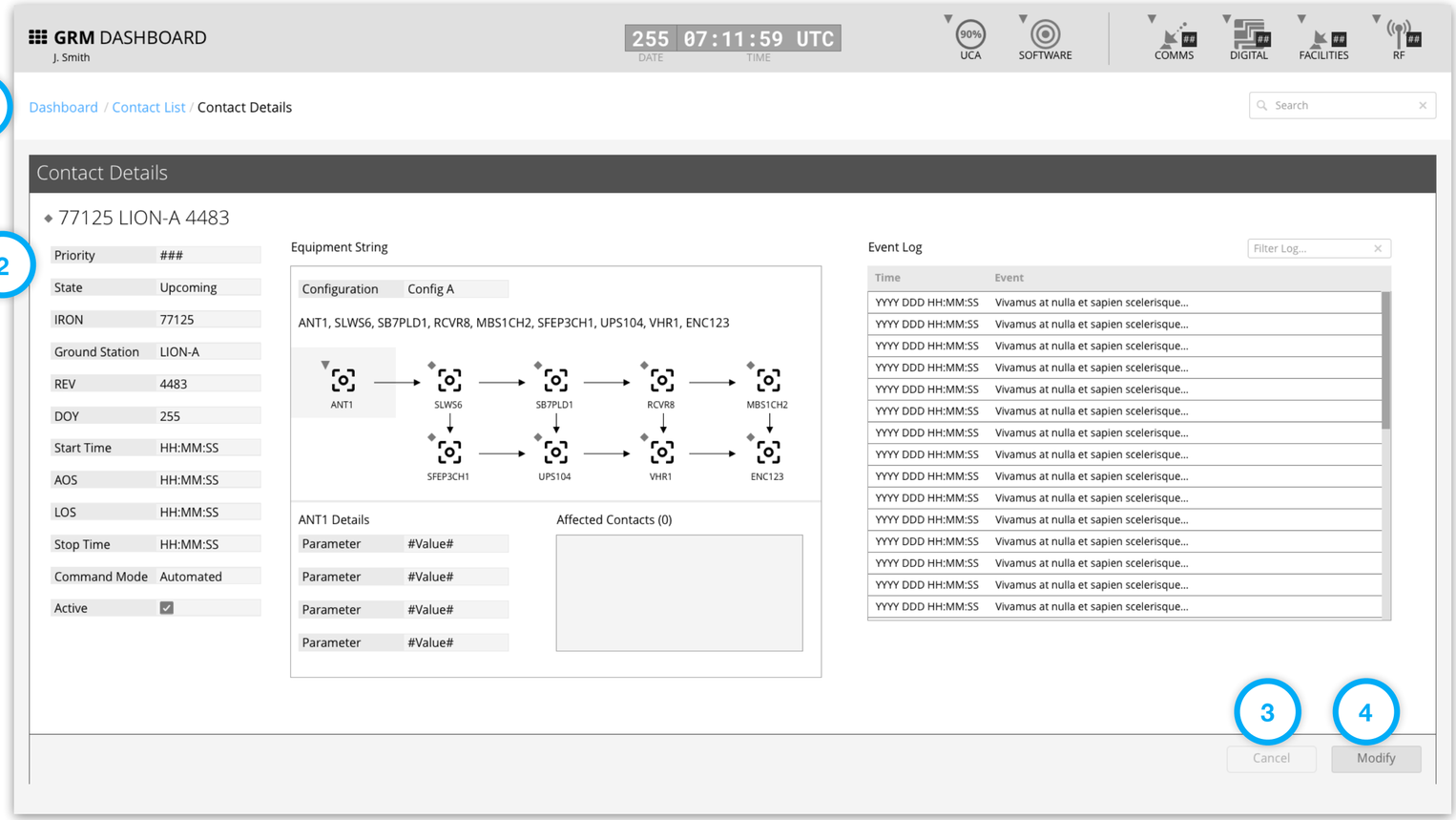
Dashboard - Contacts Summary Flow (View All)

Step

View the full contact details.

Features & Interactions

1. Breadcrumb navigation will return user to the previous page or the Dashboard.
2. Full contact details, Equipment String and Event Log are displayed.
3. Cancel returns operator to previous Contact List page.
4. Modify puts the contact in an editable mode that allows the operator to apply changes.



GRM Wireframes.pdf, page 33

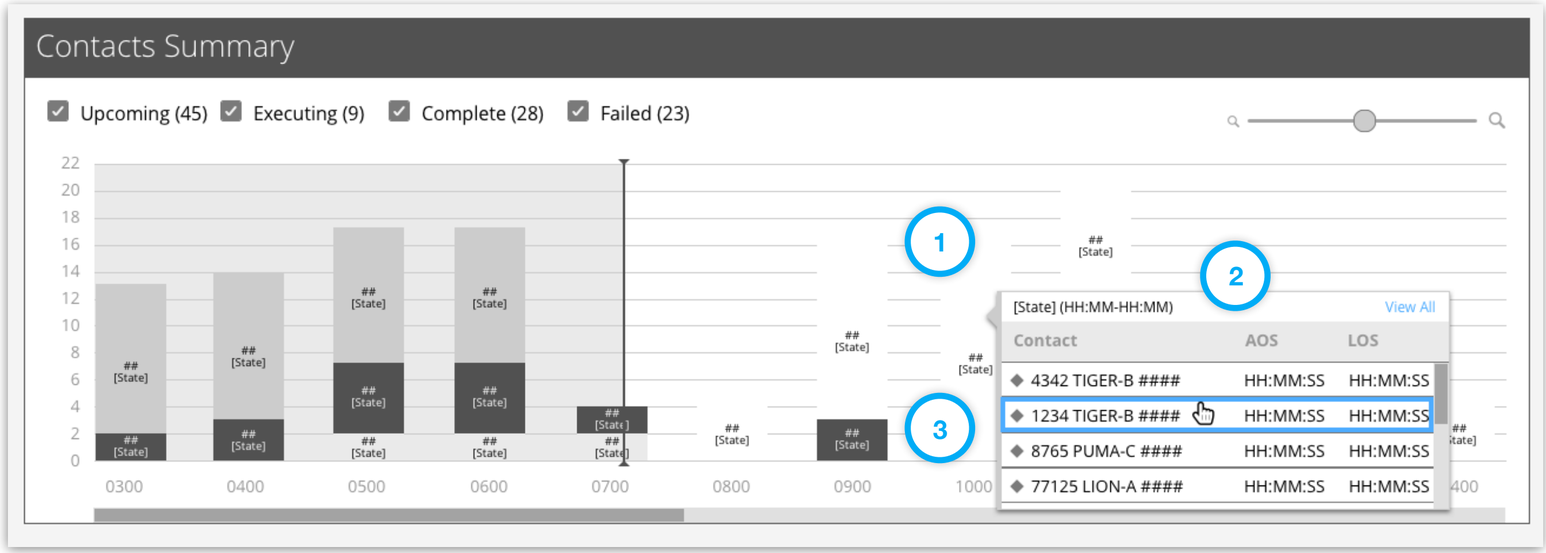
Dashboard - Contacts Summary Flow (Individual Contact)

Step

Click a segment of a bar in the graph, then click an individual contact.

Features & Interactions

1. The number of contacts and contact state are labeled for that specific graph segment.
2. The click action of a graph segment displays a pop up for that segment.
3. Clicking an individual contact sends the operator to a page with that contact's details.



GRM Wireframes.pdf, page 34

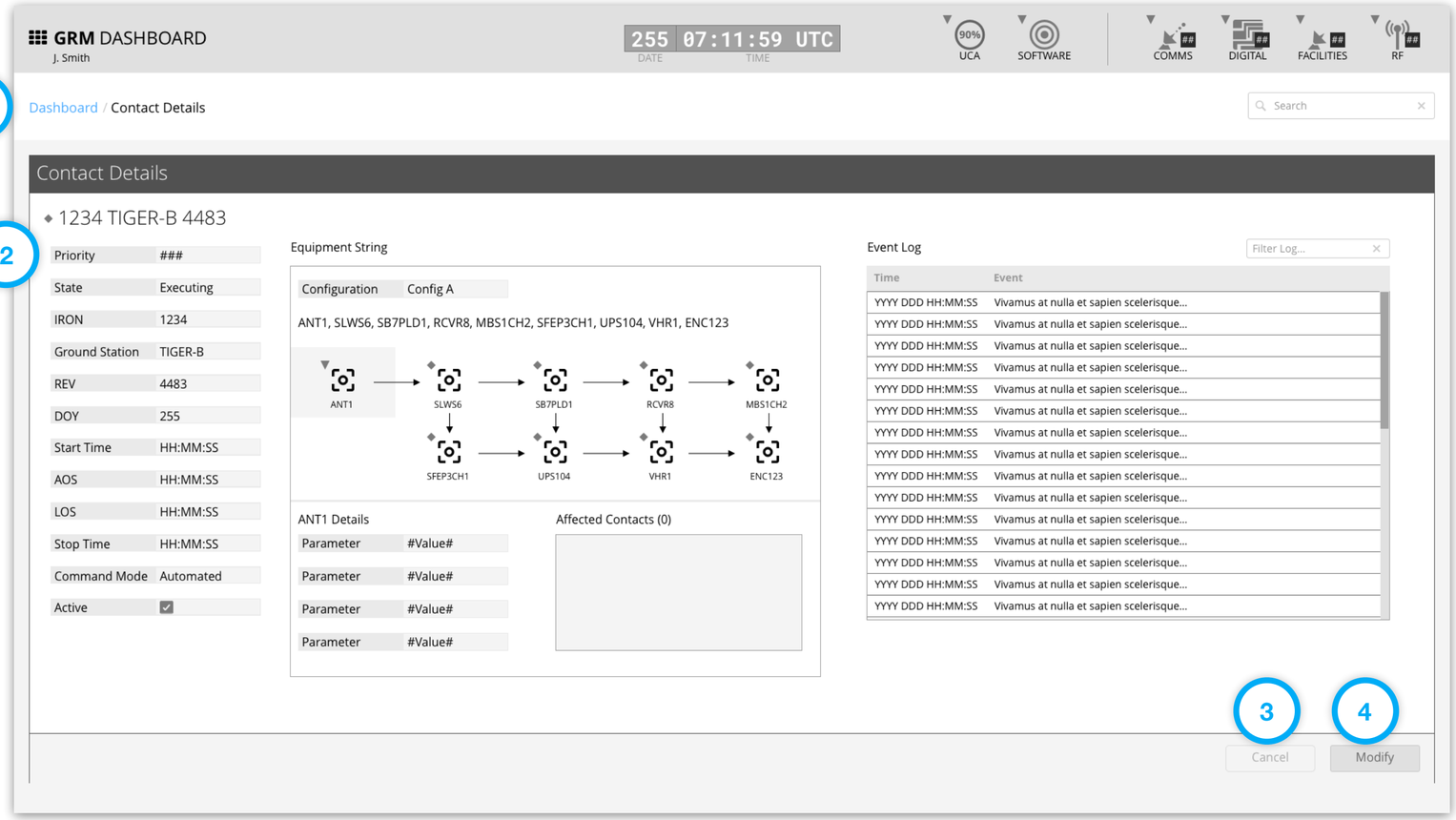
Dashboard - Contacts Summary Flow (View All)

Step

View the full contact details.

Features & Interactions

1. Breadcrumb navigation will return user to the Dashboard.
2. Full contact details, Equipment String and Event Log are displayed.
3. Cancel returns operator to the Dashboard.
4. Modify puts the contact in an editable mode that allows the operator to apply changes.



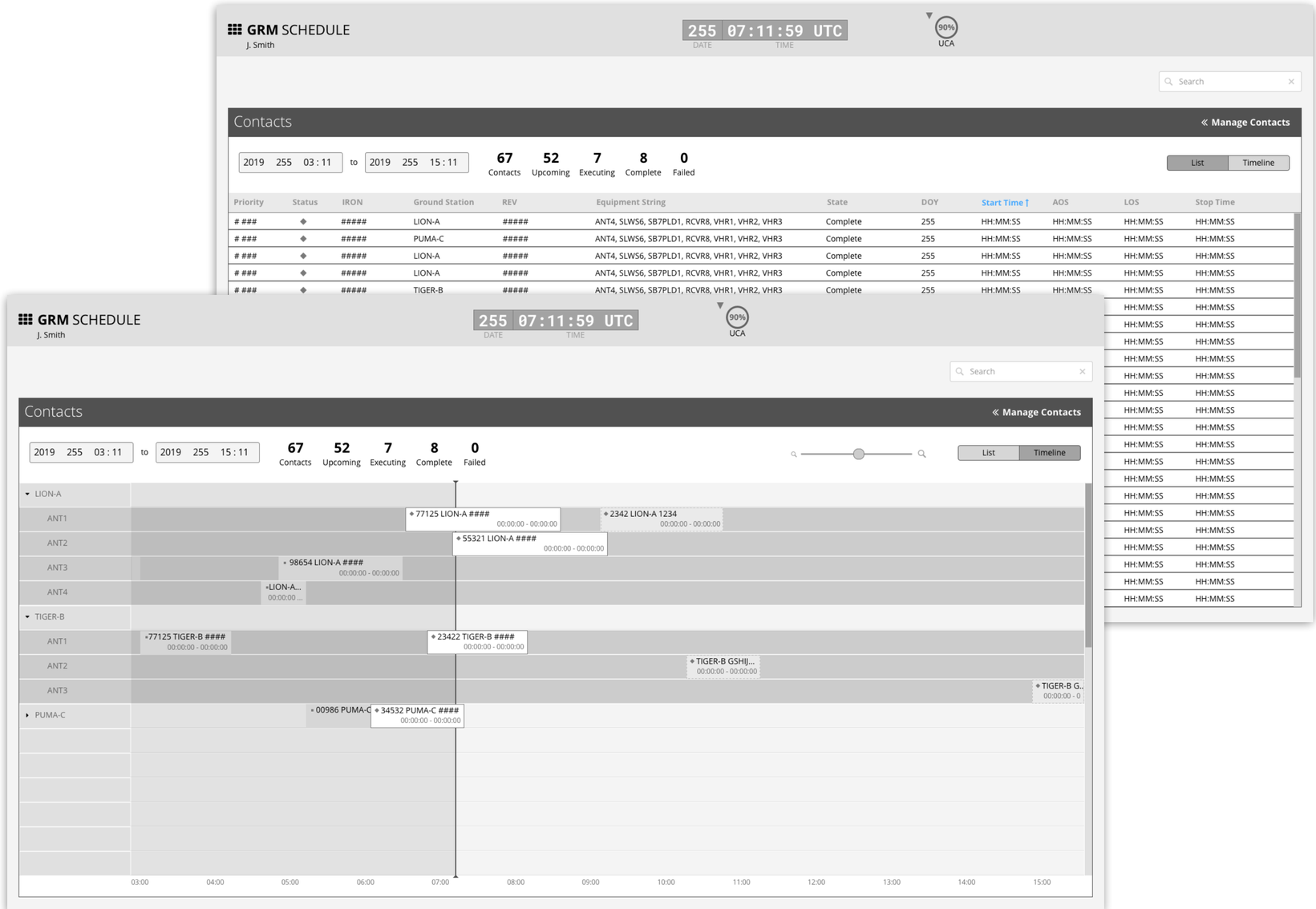
GRM Wireframes.pdf, page 35

Schedule

Schedule Overview

The Schedule application allows operators to view and interact with the full schedule of contacts via a Timeline or List View.

In addition, it allows the operator to add, view details, filter, modify and delete contacts.



GRM Wireframes.pdf, pages 40 and 42

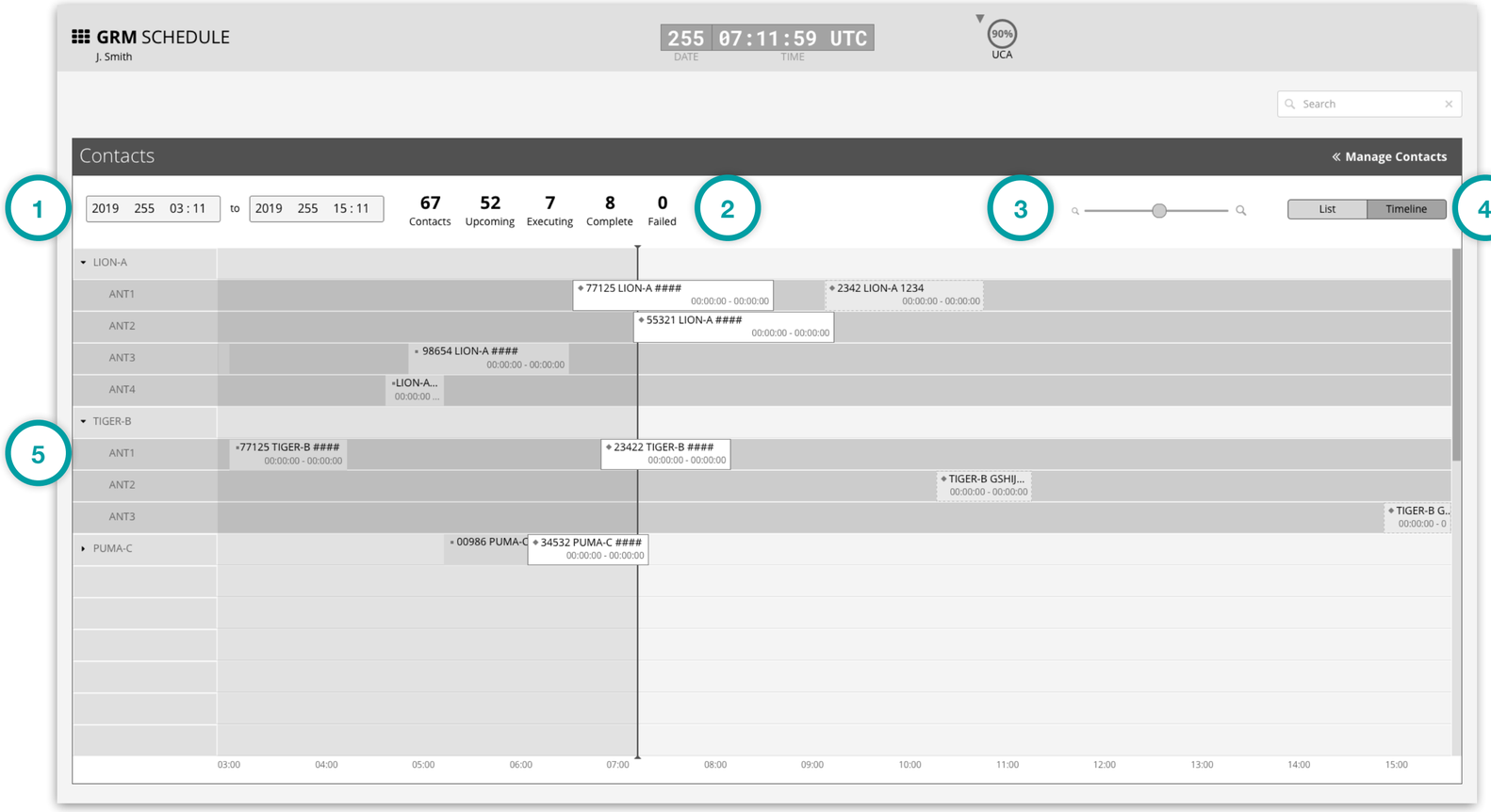
Schedule - Timeline View

Functionality

The Timeline View lists the Ground Stations and Antennas on the y-axis, and time intervals on the x-axis. The width of the horizontal bars in the graph depicts the duration of each contact.

Features & Interactions

1. Default time range set to 12 hours (4 hours in the past, 8 hours in the future). The default duration should be configured by each squadron at set up time.
2. Top line data aggregates; total contacts and contact state counts.
3. To zoom in to the Timeline, drag the slider to the right. To zoom out of the Timeline, drag the slider to the left.
4. List and Timeline view toggle control.
5. The primary row consists of the Ground Station which can be expanded to display nested rows of Antennas.



GRM Wireframes.pdf, page 42

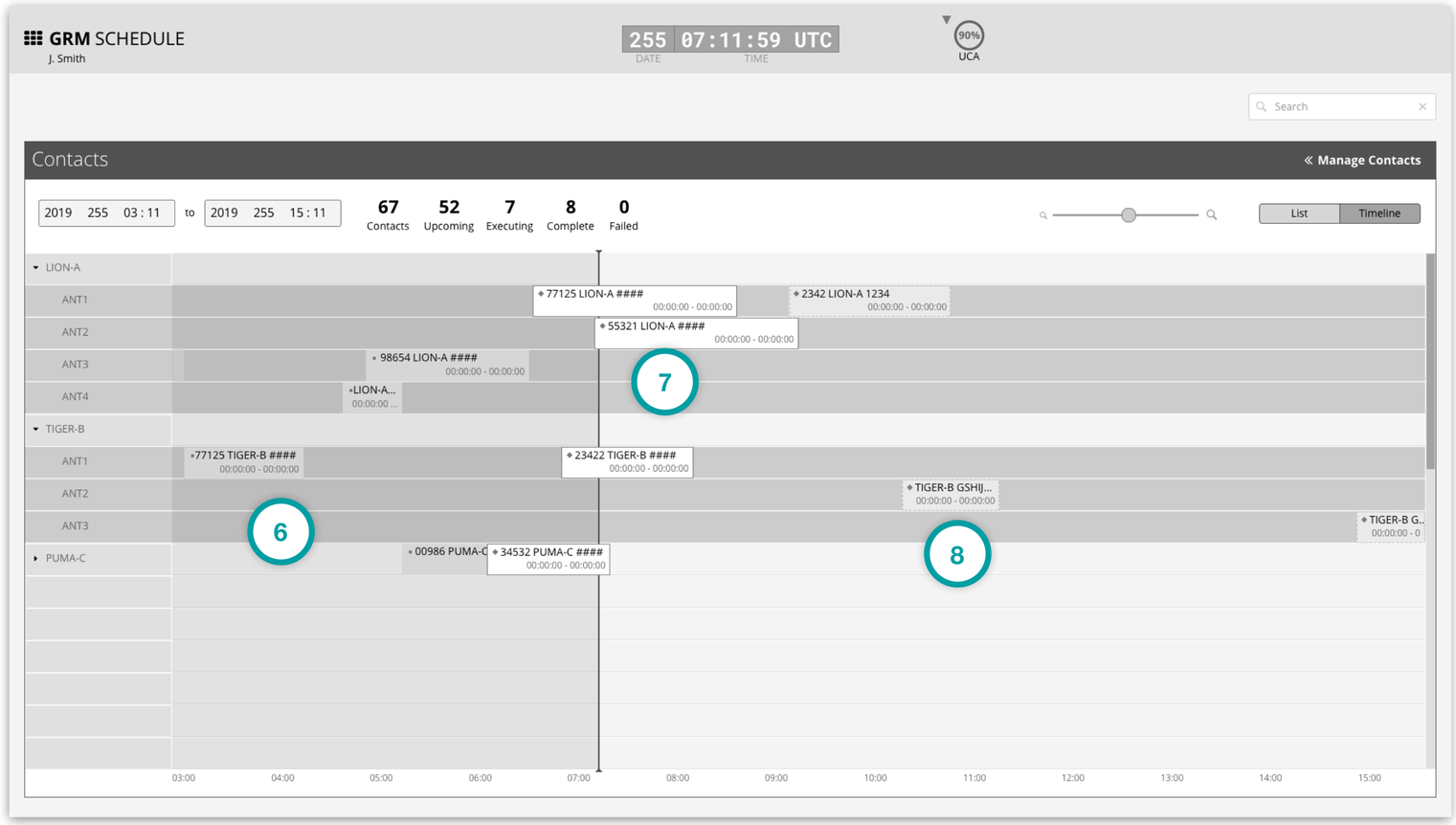
Schedule - Timeline View (Continued)

Functionality

The Timeline View lists the Ground Stations and Antennas on the y-axis, and time intervals on the x-axis. The width of the horizontal bars in the graph depicts the duration of each contact.

Features & Interactions

6. Completed Contacts appear to the left of the playhead with a monitoring icon indicating final state, contact name, and time stamp.
7. Executing Contacts appear on the playhead with a monitoring icon indicating current state, contact name, and time stamp.
8. Upcoming Contacts appear to the right of the playhead with a monitoring icon indicating current state, contact name, and time stamp.



GRM Wireframes.pdf, page 42

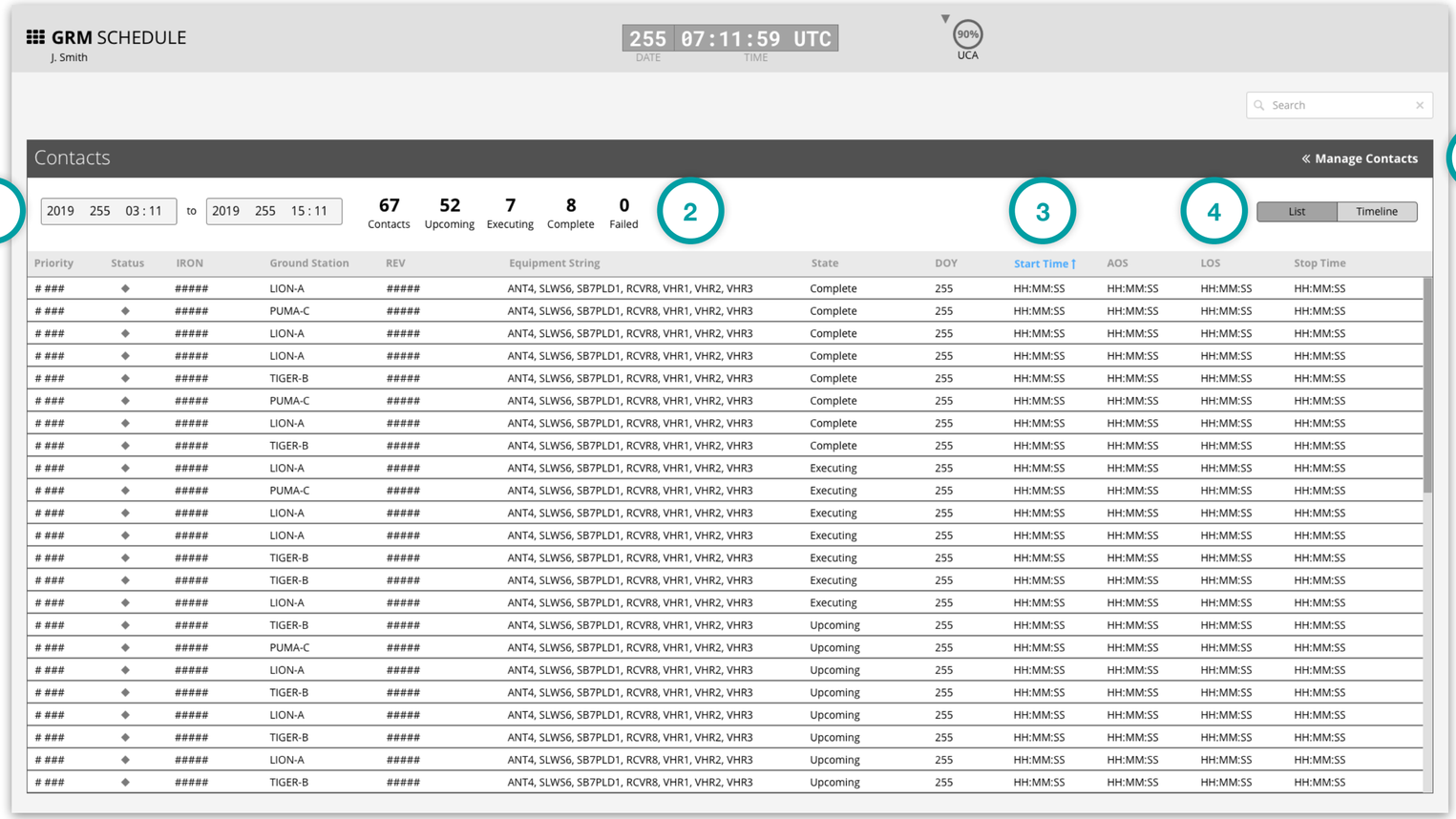
Schedule - List View

Functionality

The List View displays contact data in a tabular format for readability across multiple data points.

Features & Interactions

1. Default time range set to 12 hours (4 hours in the past, 8 hours in the future). The default duration should be configured by each squadron at set up time.
2. Top line data aggregates; total contacts and contact state counts.
3. Sortable column headers, default sort set to ascending Start Time.
4. List and Timeline view toggle control.
5. Manage Contacts Pane toggle control.



GRM Wireframes.pdf, page 40

Schedule - Manage Contacts Pane

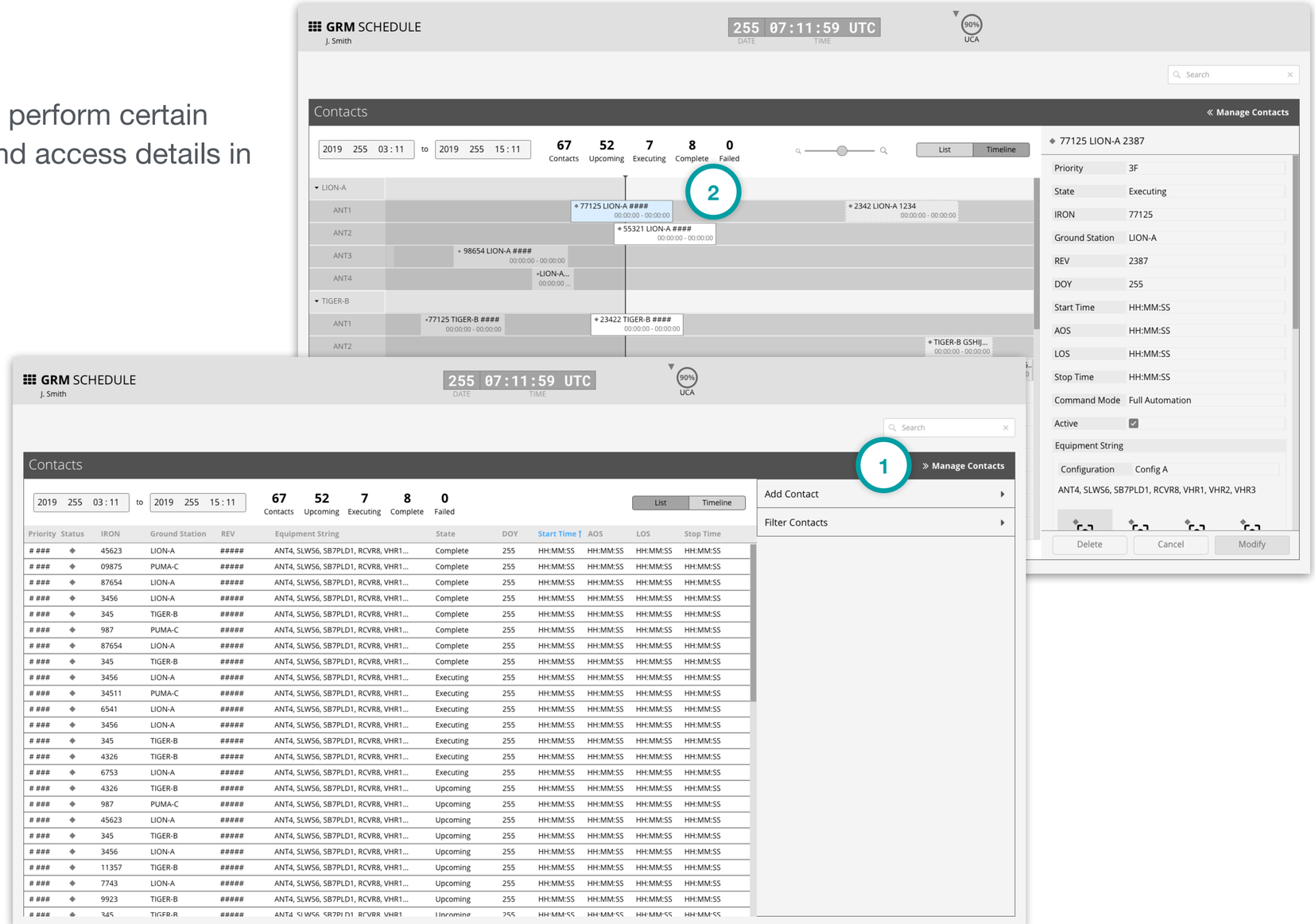
Functionality

The Manage Contacts Pane allows operators to perform certain actions, control how information is displayed, and access details in regards to contacts within the Schedule.

Features & Interactions

1. Clicking the Manage Contacts toggle displays root level actions of **adding a contact** or **filtering contacts**. Selecting an action navigates the operator to a subview within the pane.

2. Selecting a contact from the schedule displays contact details in the Manage Contacts Pane. Operators may **view, modify, or delete** the selected contact.

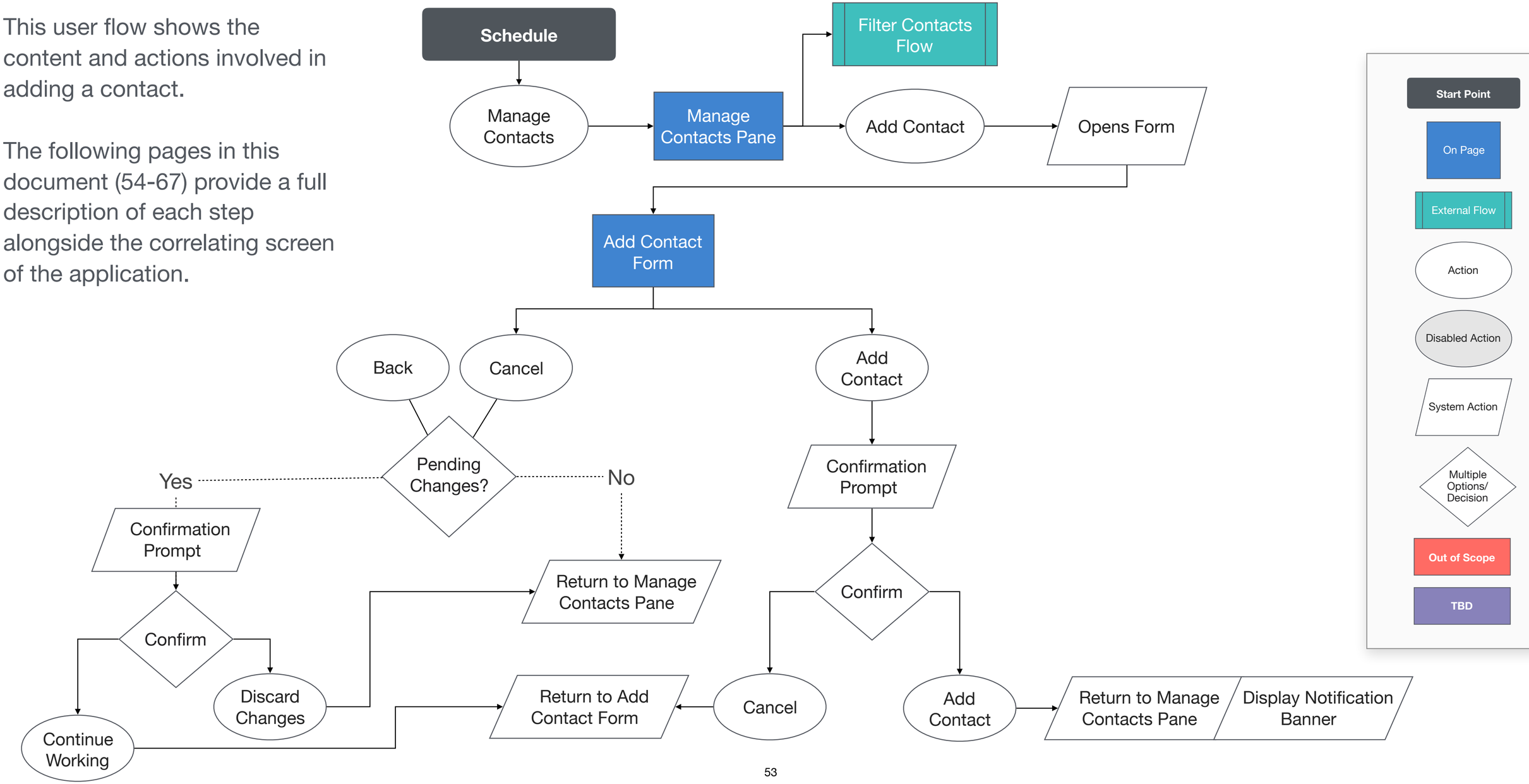


GRM Wireframes.pdf, pages 43-44

Schedule - Add Contact Flow

This user flow shows the content and actions involved in adding a contact.

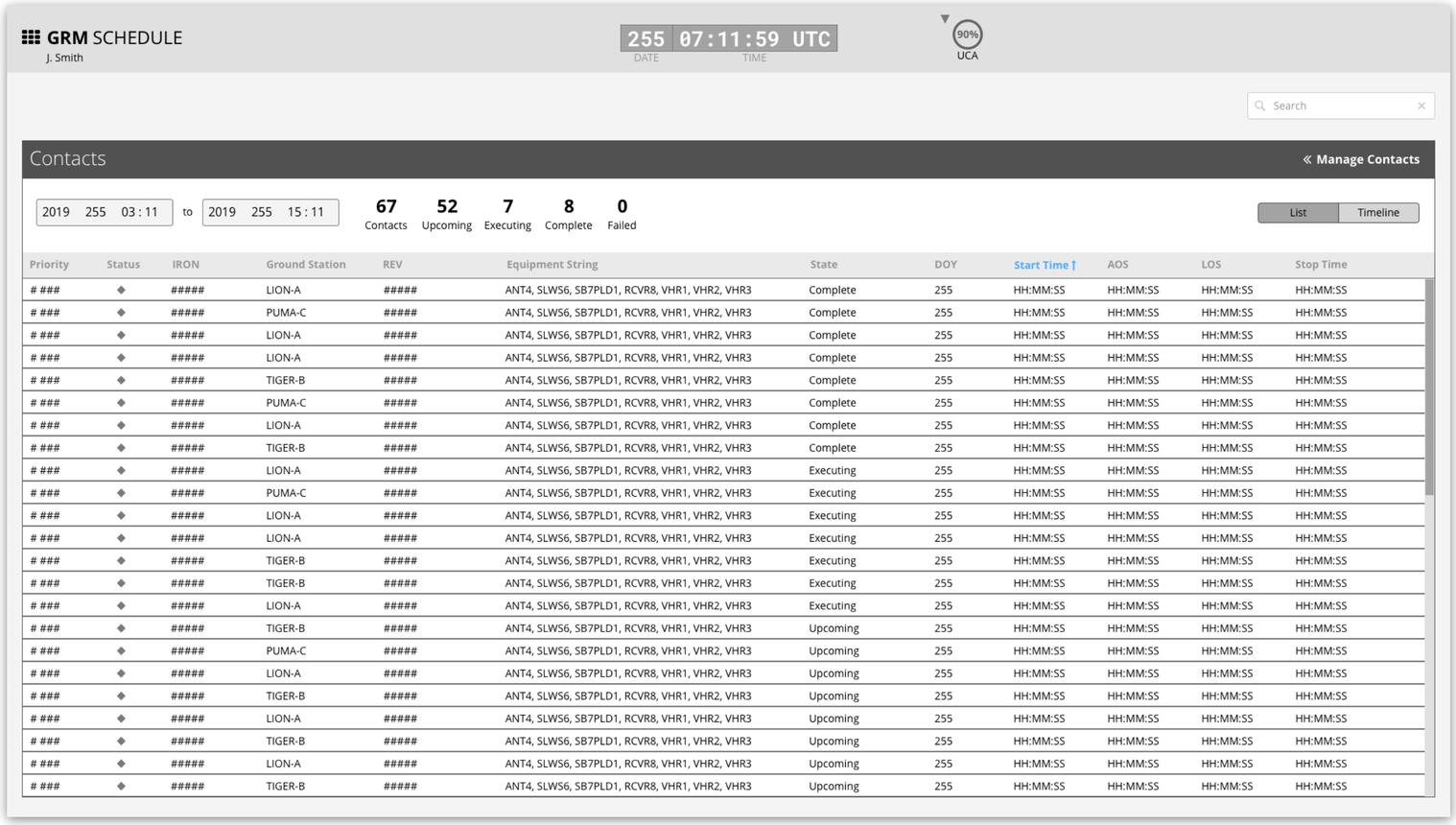
The following pages in this document (54-67) provide a full description of each step alongside the correlating screen of the application.



Schedule - Add Contact Flow

Step

Click “Manage Contacts” to open the pane.

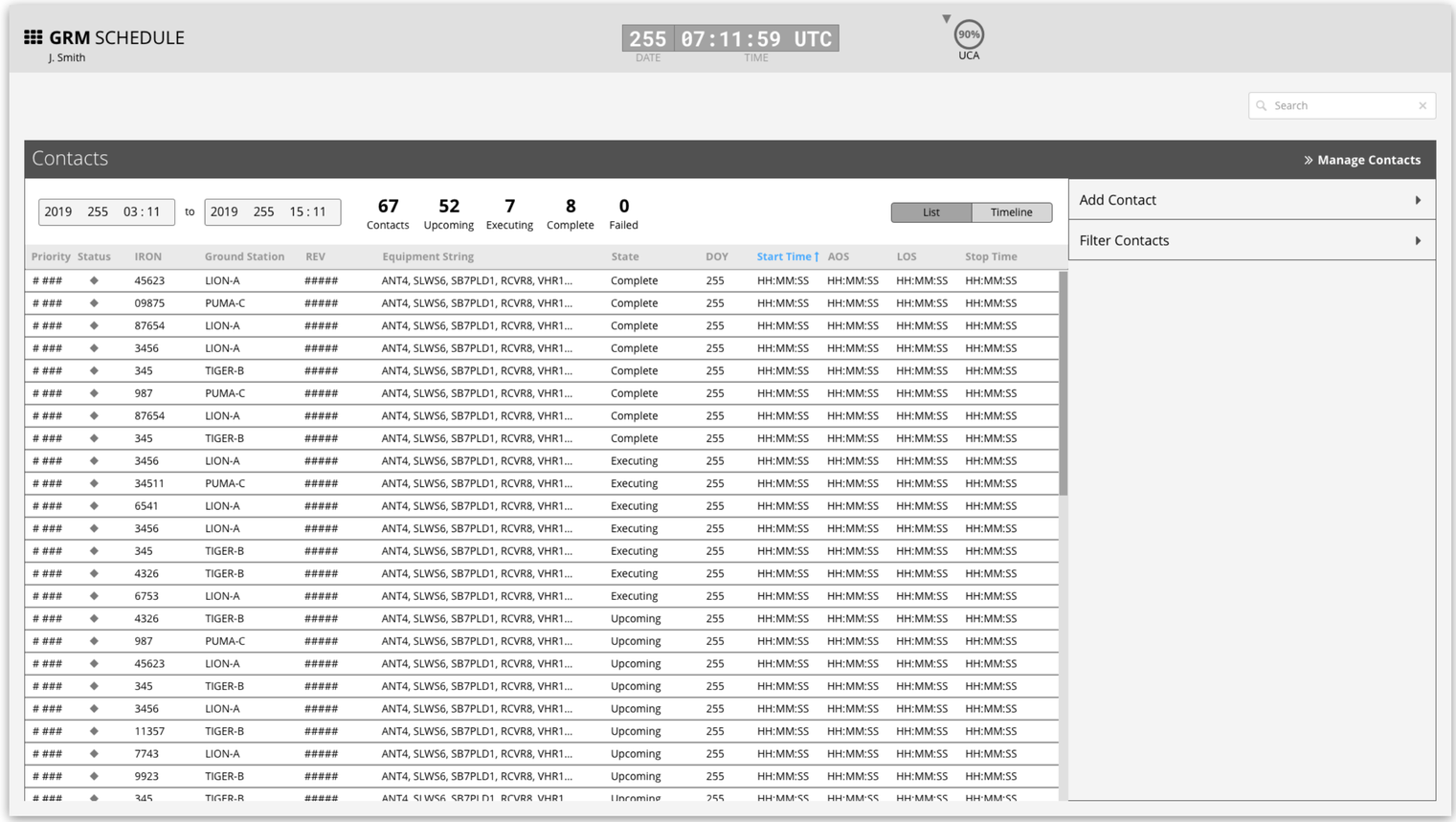


GRM Wireframes.pdf, page 40

Schedule - Add Contact Flow

Step

Click “Add Contact” to access the form.



GRM Wireframes.pdf, page 44

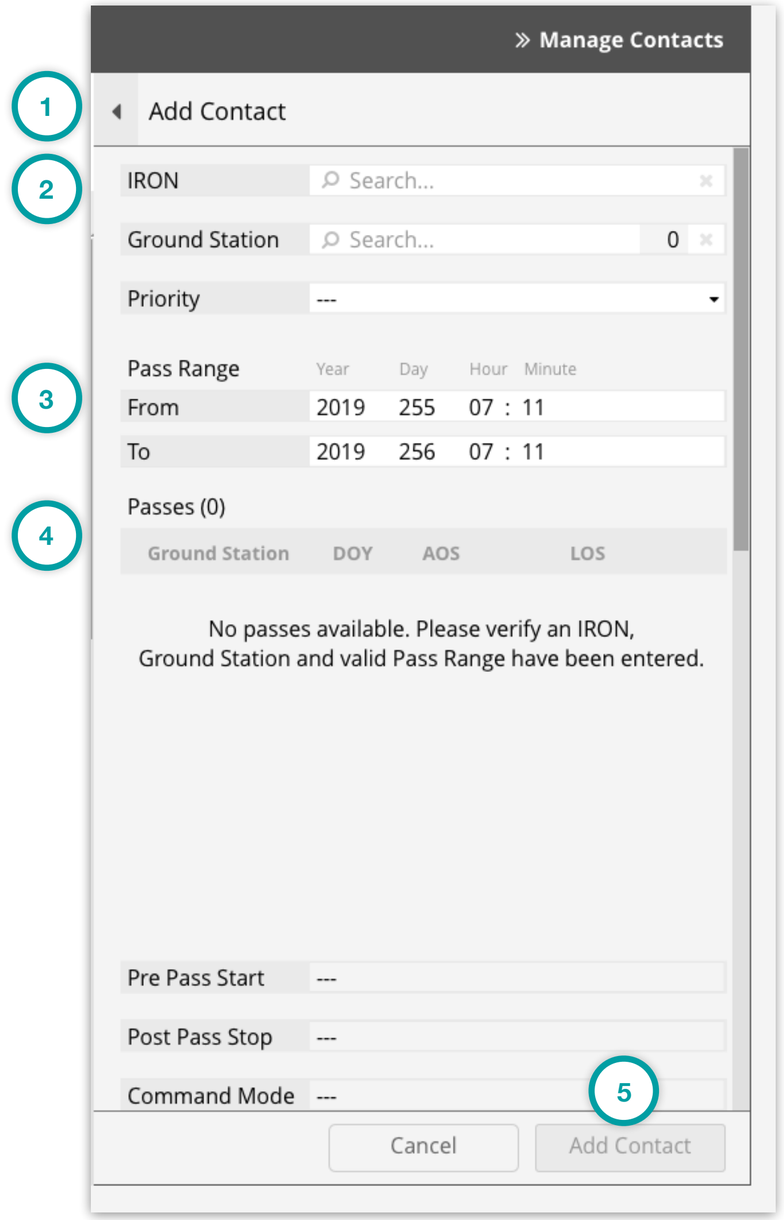
Schedule - Add Contact Flow

Step

Click “IRON” field to enter an IRON.

Features & Interactions

1. Back button returns user to the root level Manage Contacts Menu.
2. It is recommended to use a Search field when there are more than 10 or a dropdown list if there are fewer than 10 but more than 5 options for an IRON or SVID.
3. Pass Range may be populated with a default value of the current time in the From field and 24 hours ahead in the To field. The Pass Range should be configured by each squadron at set up time.
4. A list of Passes are generated when the required fields have been entered, until then a message is displayed for the empty state.
5. Cancel button returns user to the root level Manage Contacts Menu. Add Contact remains disabled until all fields have been entered.



GRM Wireframes.pdf, page 45

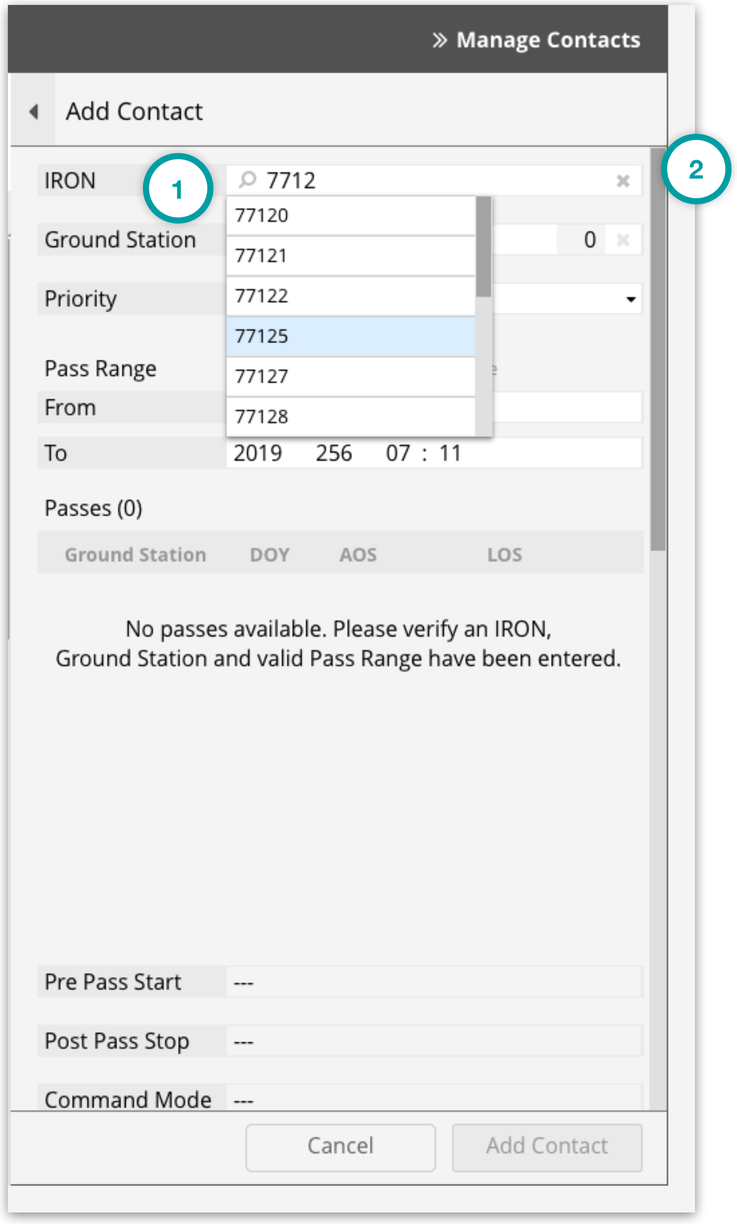
Schedule - Add Contact Flow

Step

Enter “IRON” and select the correct option.

Features & Interactions

1. As the value is entered, a list of possible results is populated. Only a single option may be selected.
2. The value may be quickly cleared by clicking the “x.”



GRM Wireframes.pdf, page 46

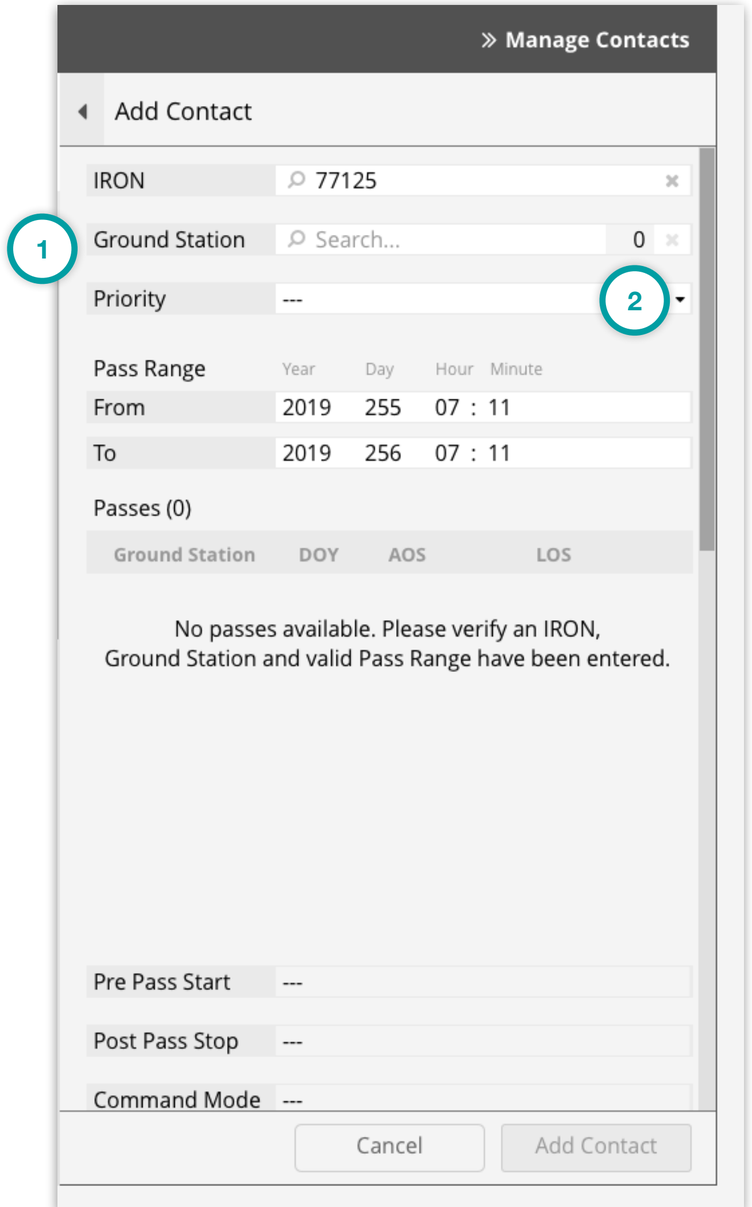
Schedule - Add Contact Flow

Step

Click “Ground Station” field to enter a Ground Station. Only Ground Stations that are compatible with the IRON will be available.

Features & Interactions

1. It is recommended to use a Search field when there are more than 10 or a dropdown list if there are fewer than 10 but more than 5 options for Ground Stations.
2. A counter indicates how many Ground Stations have been selected. One or many may be selected.



GRM Wireframes.pdf, page 47

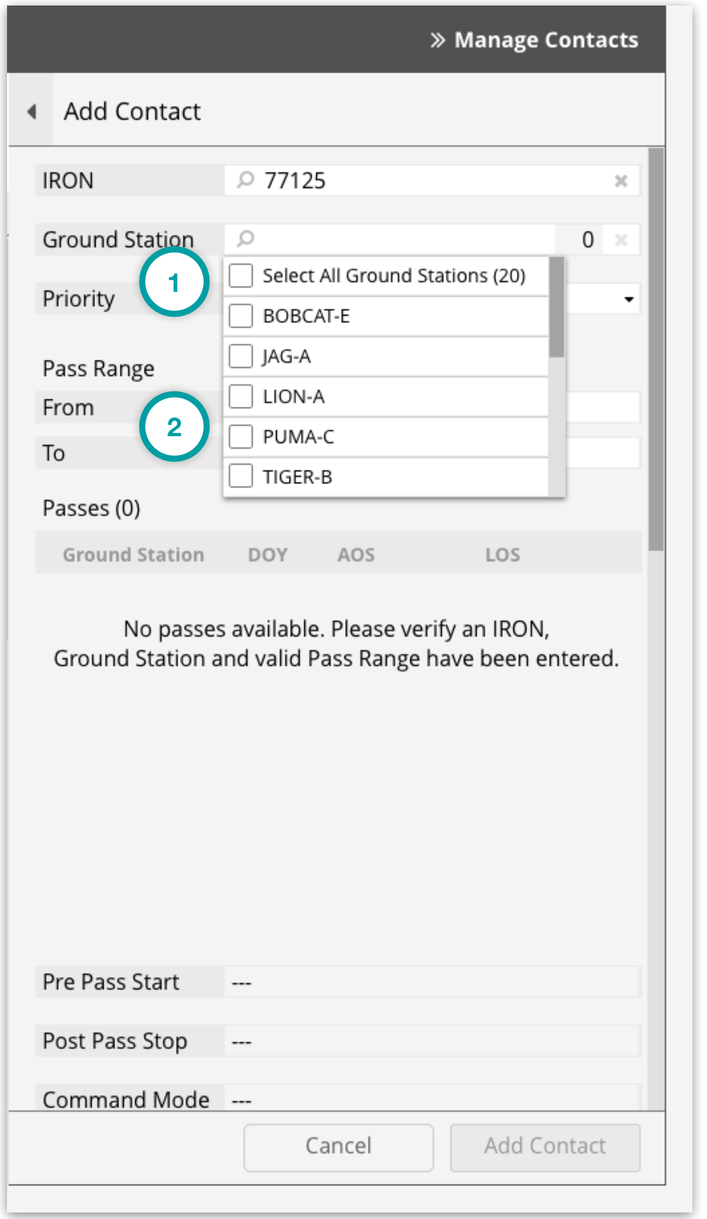
Schedule - Add Contact Flow

Step

“Ground Station” is the active field. A list of possible Ground Stations is displayed to select from.

Features & Interactions

1. The first option allows the operator to select All Ground Stations.
2. All other options are listed as individual Ground Stations where one or many may be selected.



GRM Wireframes.pdf, page 48

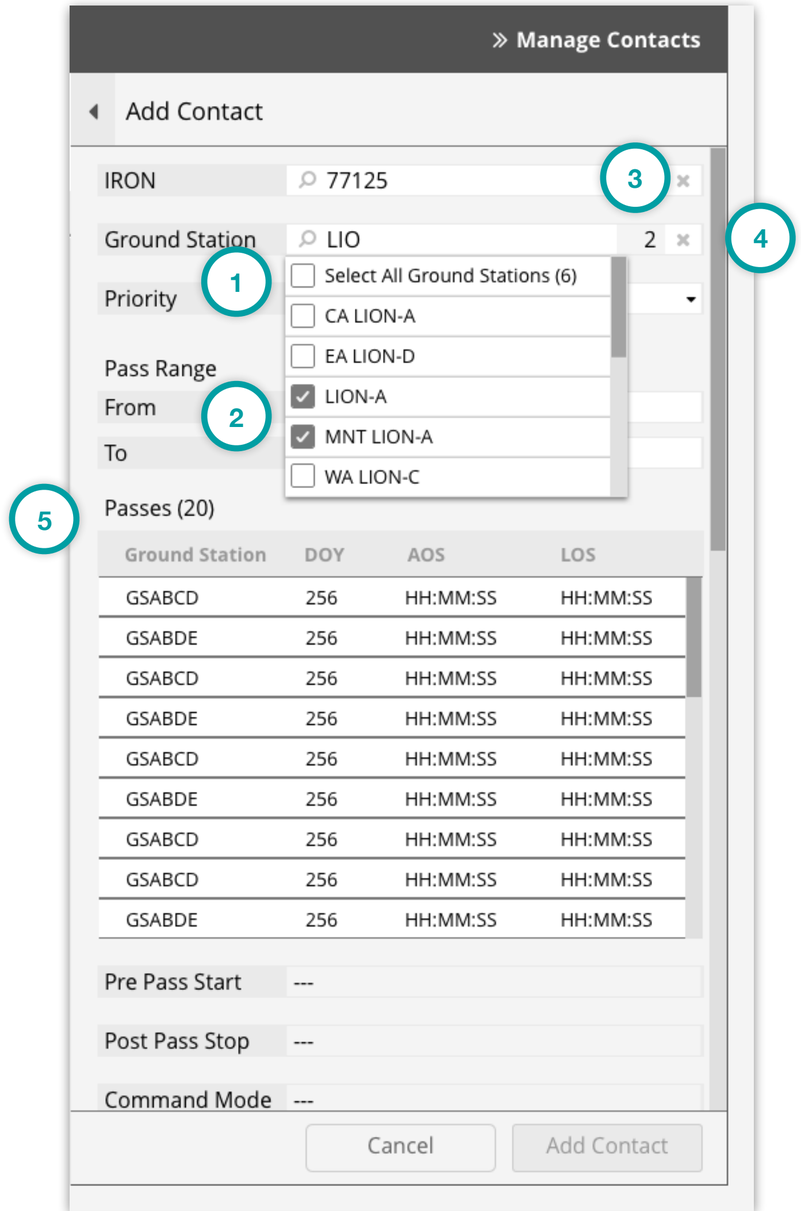
Schedule - Add Contact Flow

Step

Enter “IRON” and select the correct option.

Features & Interactions

1. As the value is entered, a list of possible results is populated.
2. One, many or all options may be selected.
3. The counter reflects how many Ground Stations have been selected.
4. The value may be quickly cleared by clicking the “x.”
5. As Ground Stations are selected, the Passes are generated from the IRON, Ground Station, and Pass Range values entered.



GRM Wireframes.pdf, page 49

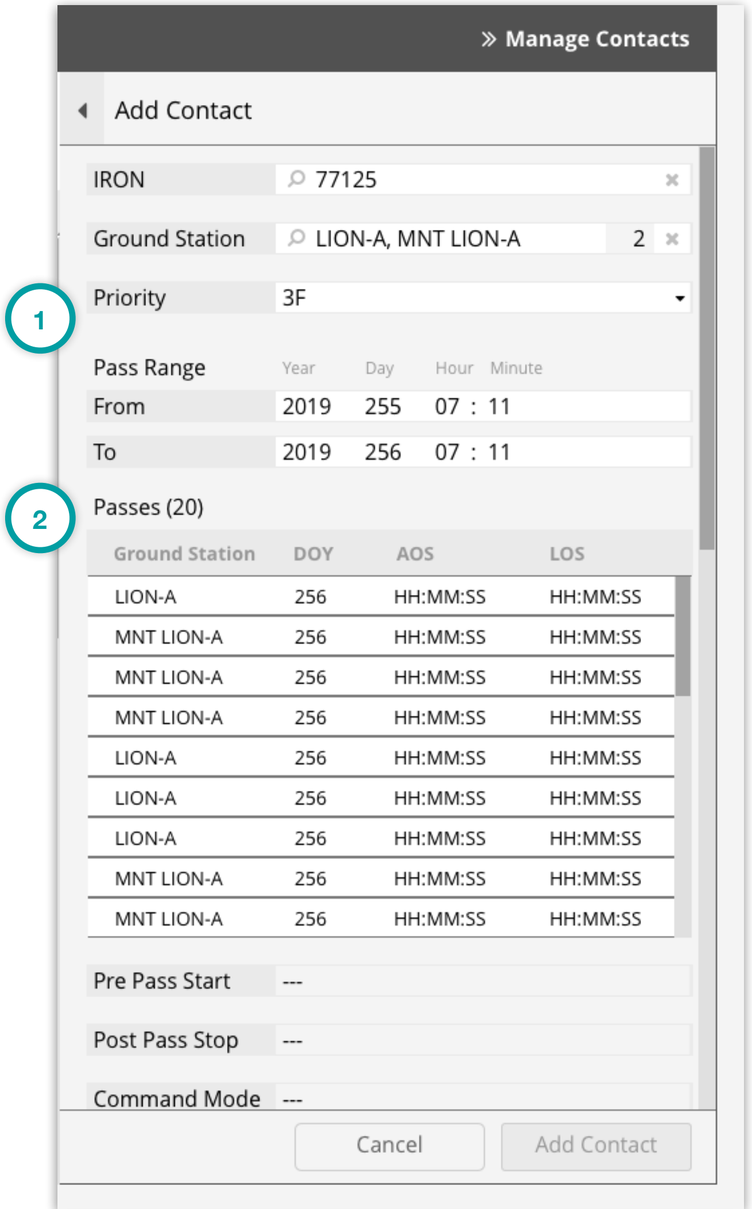
Schedule - Add Contact Flow

Step

Enter “Priority” value.

Features & Interactions

1. Priority formatting and scales may be configured accordingly. It is recommended to use a Search field when there are more than 10 options or a dropdown list if there are fewer than 10 but more than 5 options for priority values.
2. The available passes may be updated based on the priority selected where a higher priority contact is given the pass slot of a lower priority contact.



GRM Wireframes.pdf, page 50

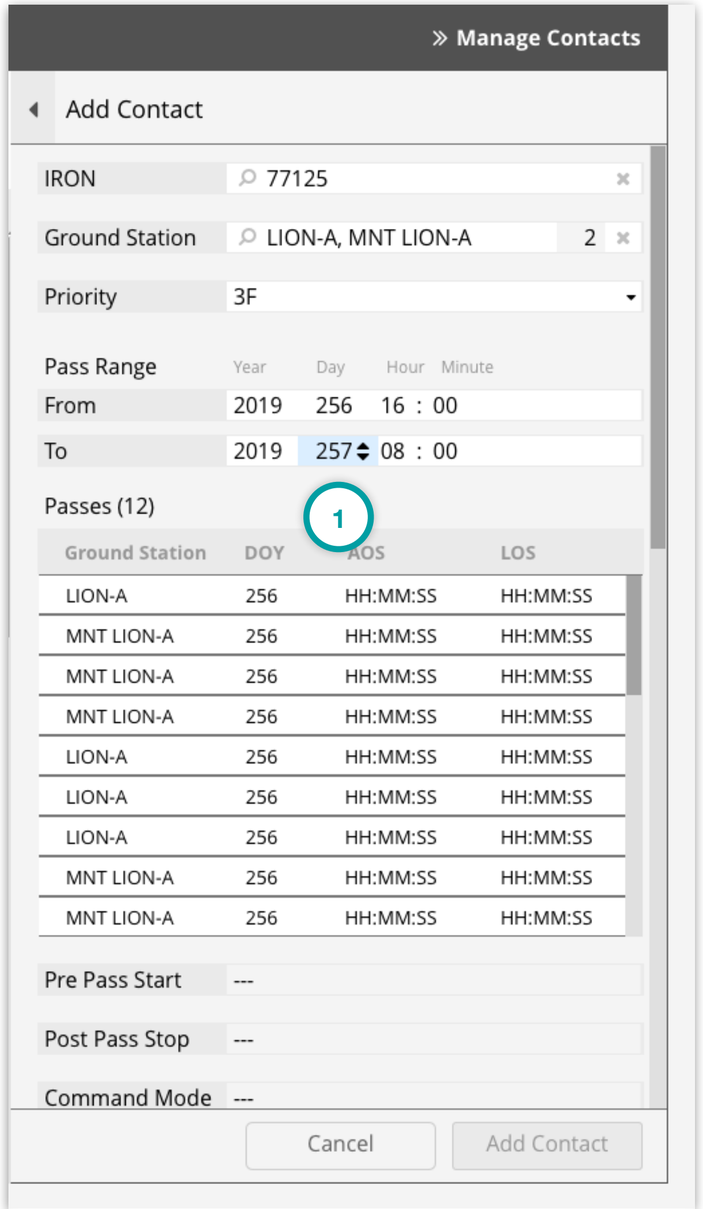
Schedule - Add Contact Flow

Step

Specify the Pass Range.

Features & Interactions

1. Operators may alter the Year, Day, Hour and Minute. The “To” value must be greater than the current time and the “From” value.



GRM Wireframes.pdf, page 51

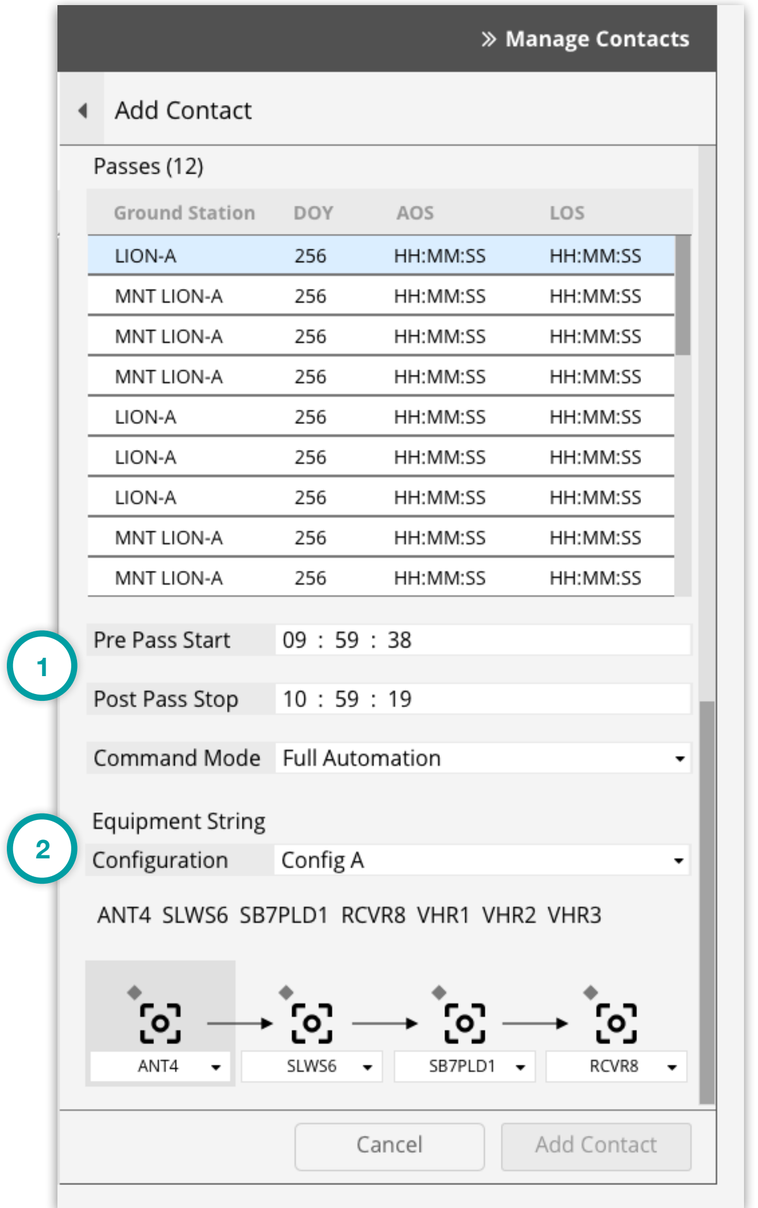
Schedule - Add Contact Flow

Step

Select a Pass.

Features & Interactions

1. The selected pass will calculate and populate the values for Pre Pass Start and Post Pass Stop.
2. The combination of the IRON, Ground Station, Priority, and selected Pass will determine and populate the optimal Equipment String Configuration.



GRM Wireframes.pdf, page 52

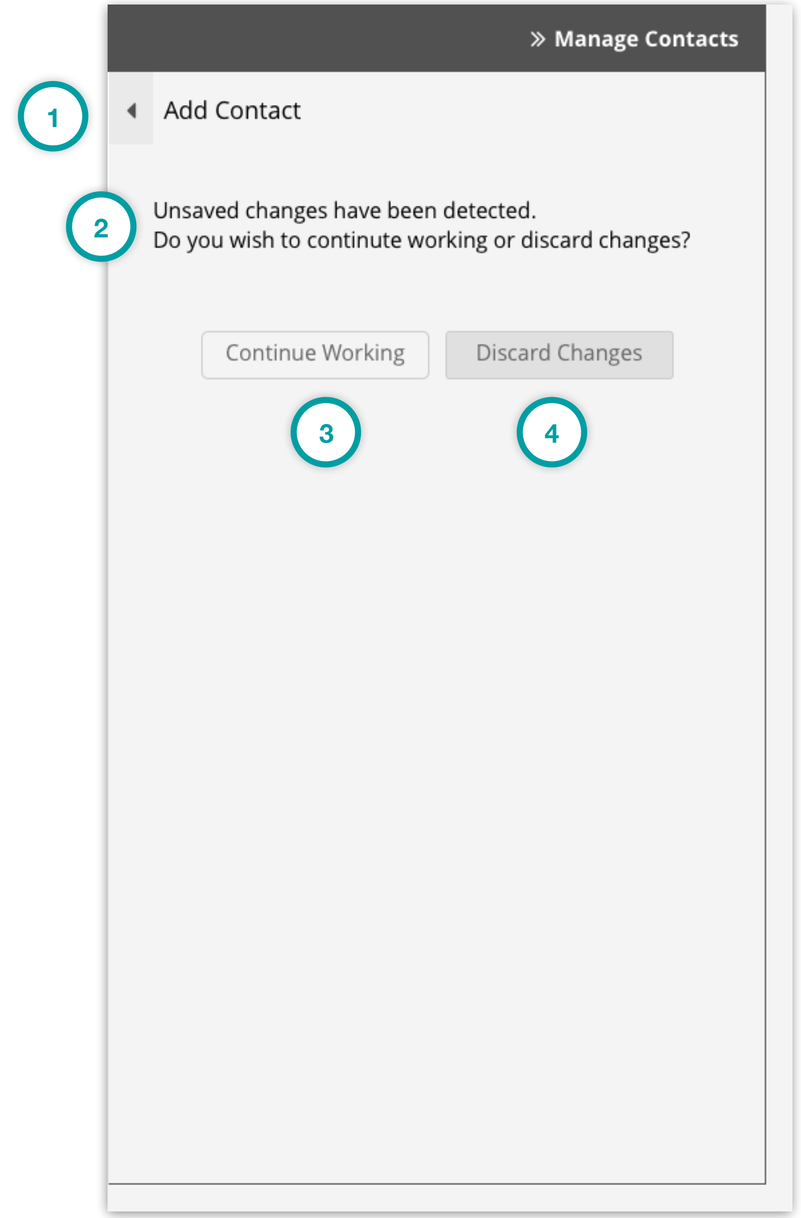
Schedule - Add Contact Flow

Step

Operator navigates away from the Add Contact form when there are unsaved changes.

Features & Interactions

1. Back button returns operator to the previous Add Contact form.
2. Unsaved changes detected message.
3. Continue Working returns operator to the previous Add Contact form.
4. Discard Changes does not submit changes and navigates operator to intended location.



GRM Wireframes.pdf, page 55

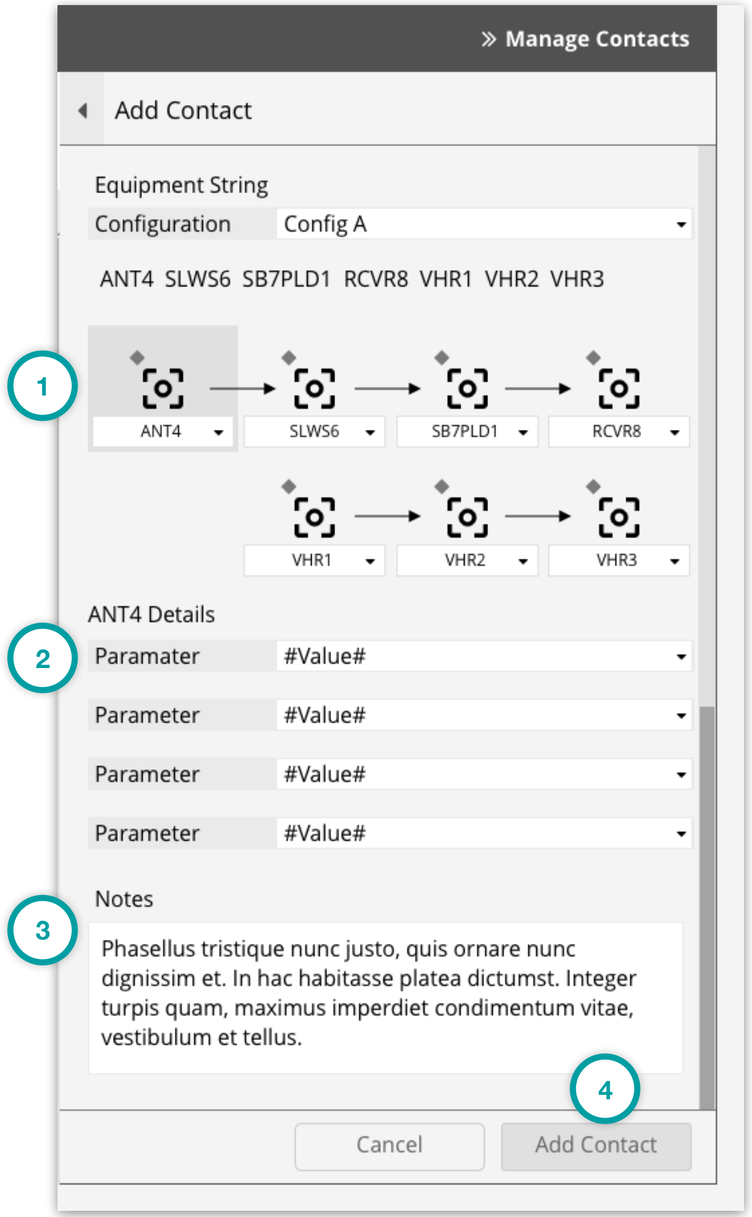
Schedule - Add Contact Flow

Step

Verify Equipment String, enter notes, and add contact.

Features & Interactions

1. Operators have the ability to modify the equipment string.
2. Operators have the ability to modify parameters of the selected equipment.
3. Notes must be added for a contact.
4. Once all requirements have been met, the “Add Contact” button becomes enabled.



GRM Wireframes.pdf, page 53

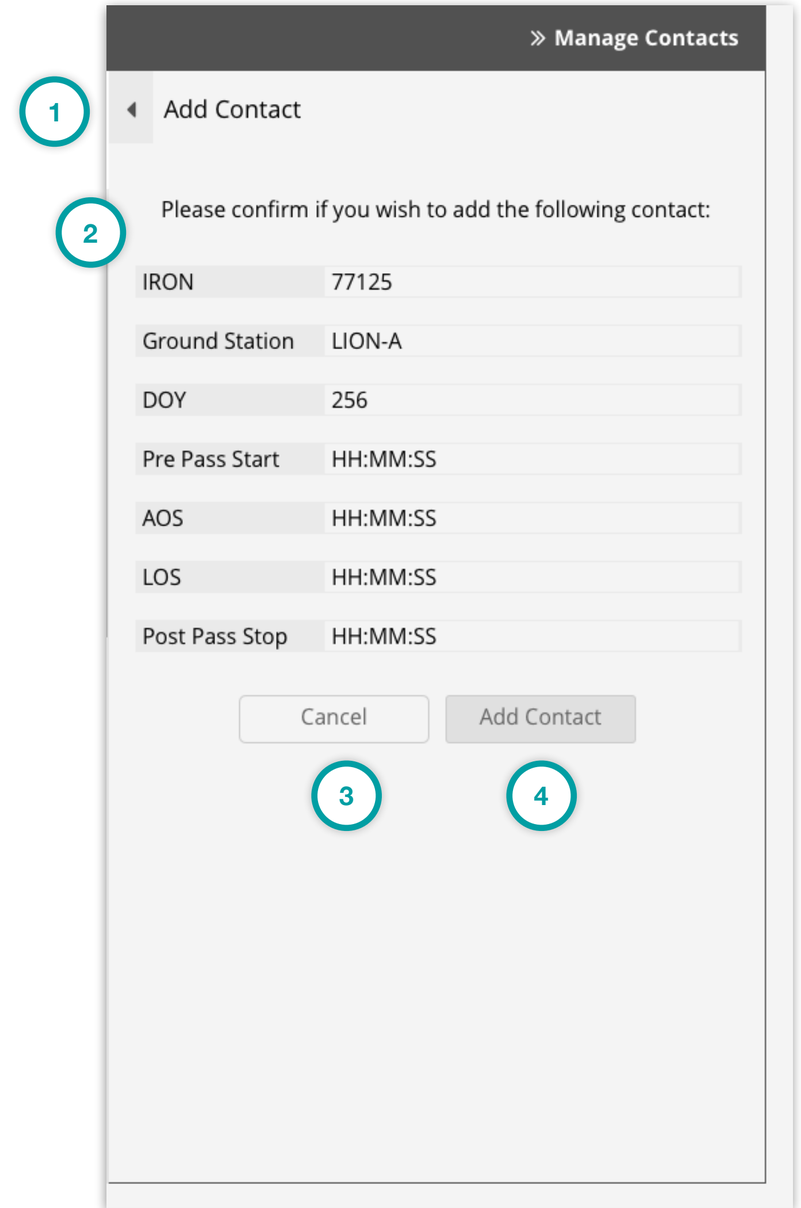
Schedule - Add Contact Flow

Step

Add Contact Confirmation.

Features & Interactions

1. Back button returns operator to the previous Add Contact form.
2. Confirmation message and summary are displayed to the operator.
3. Cancel returns operator to the previous Add Contact form.
4. Add Contact submits the new contact to the Schedule.



GRM Wireframes.pdf, page 54

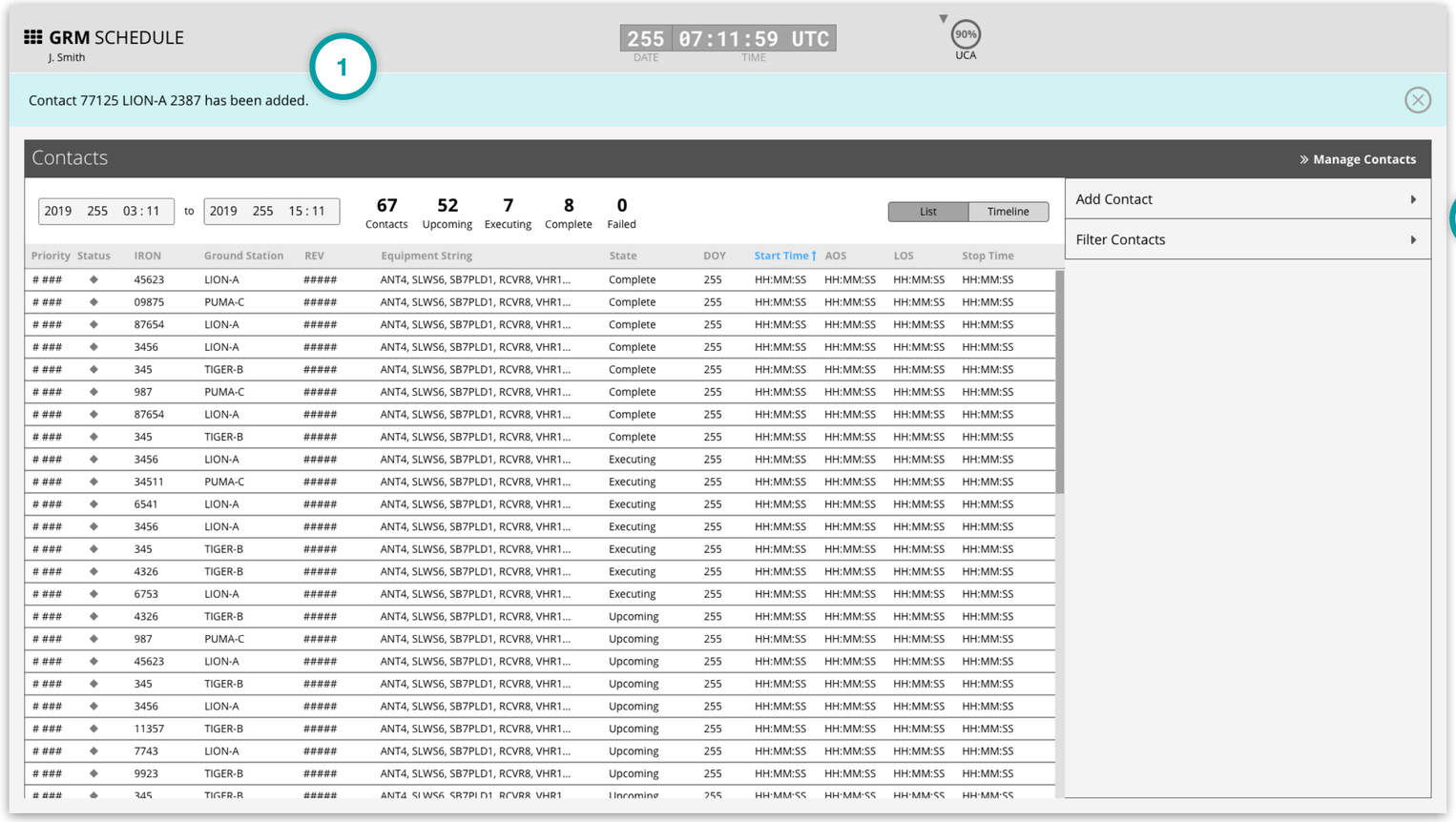
Schedule - Add Contact Flow

Step

After clicking “Add Contact”, a Notification Banner displays showing that the contact has been added.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar indicating which contact has been added. The operator can dismiss the banner by clicking the “X” button on the right.
2. Manage Contacts Pane returns to root level menu.

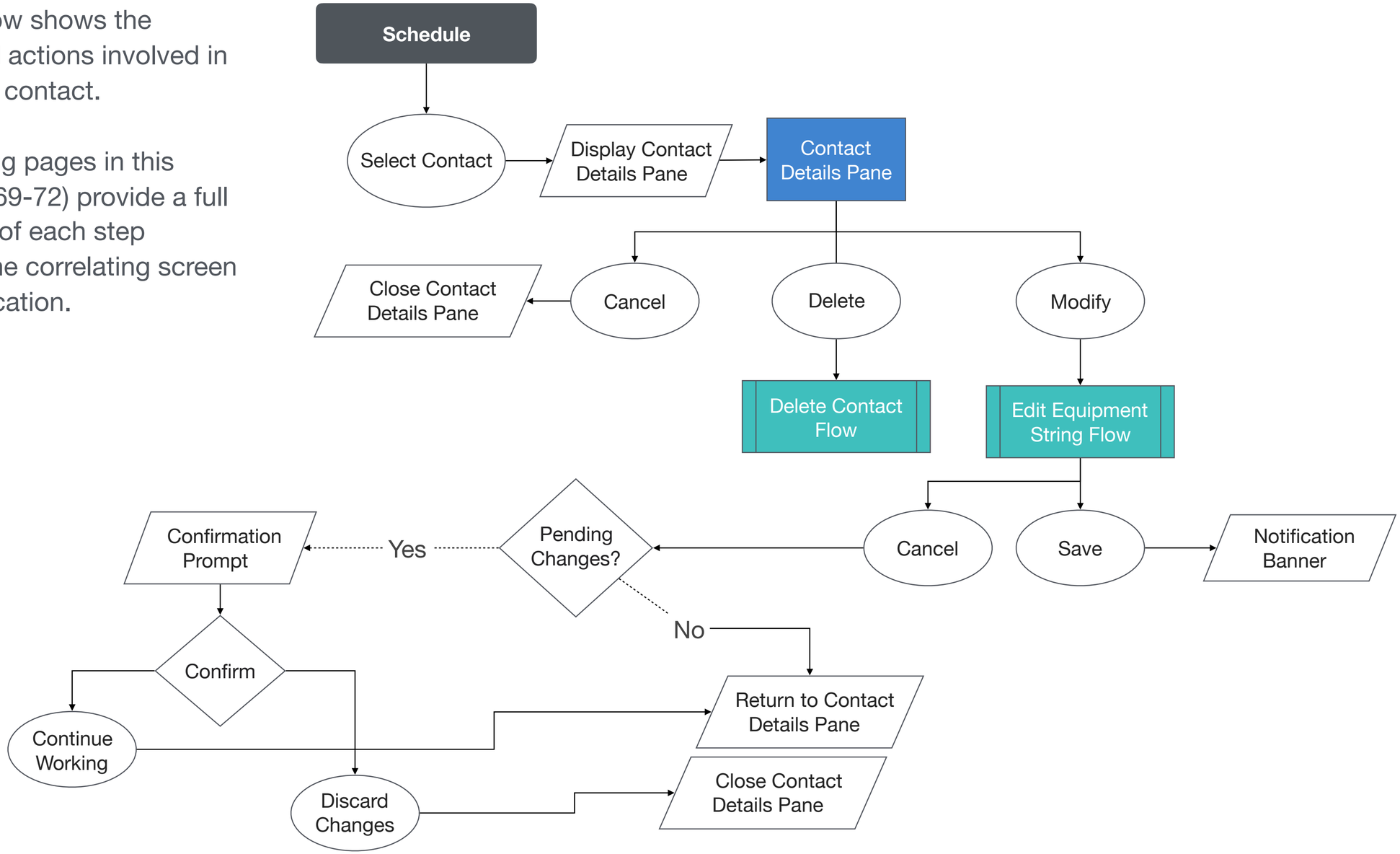


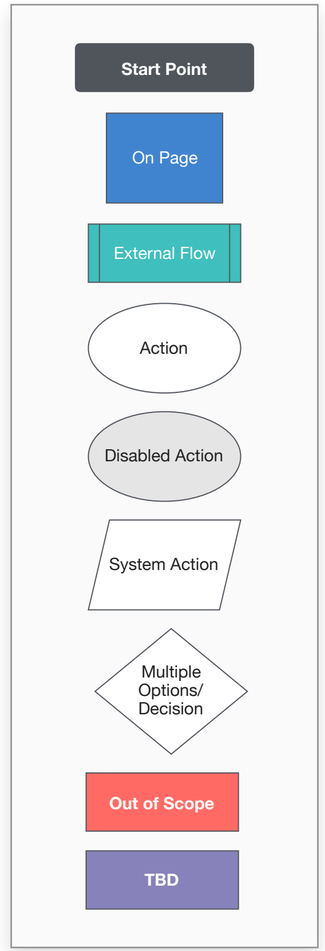
GRM Wireframes.pdf, page 56

Schedule - Modify Contact Flow

This user flow shows the content and actions involved in modifying a contact.

The following pages in this document (69-72) provide a full description of each step alongside the correlating screen of the application.





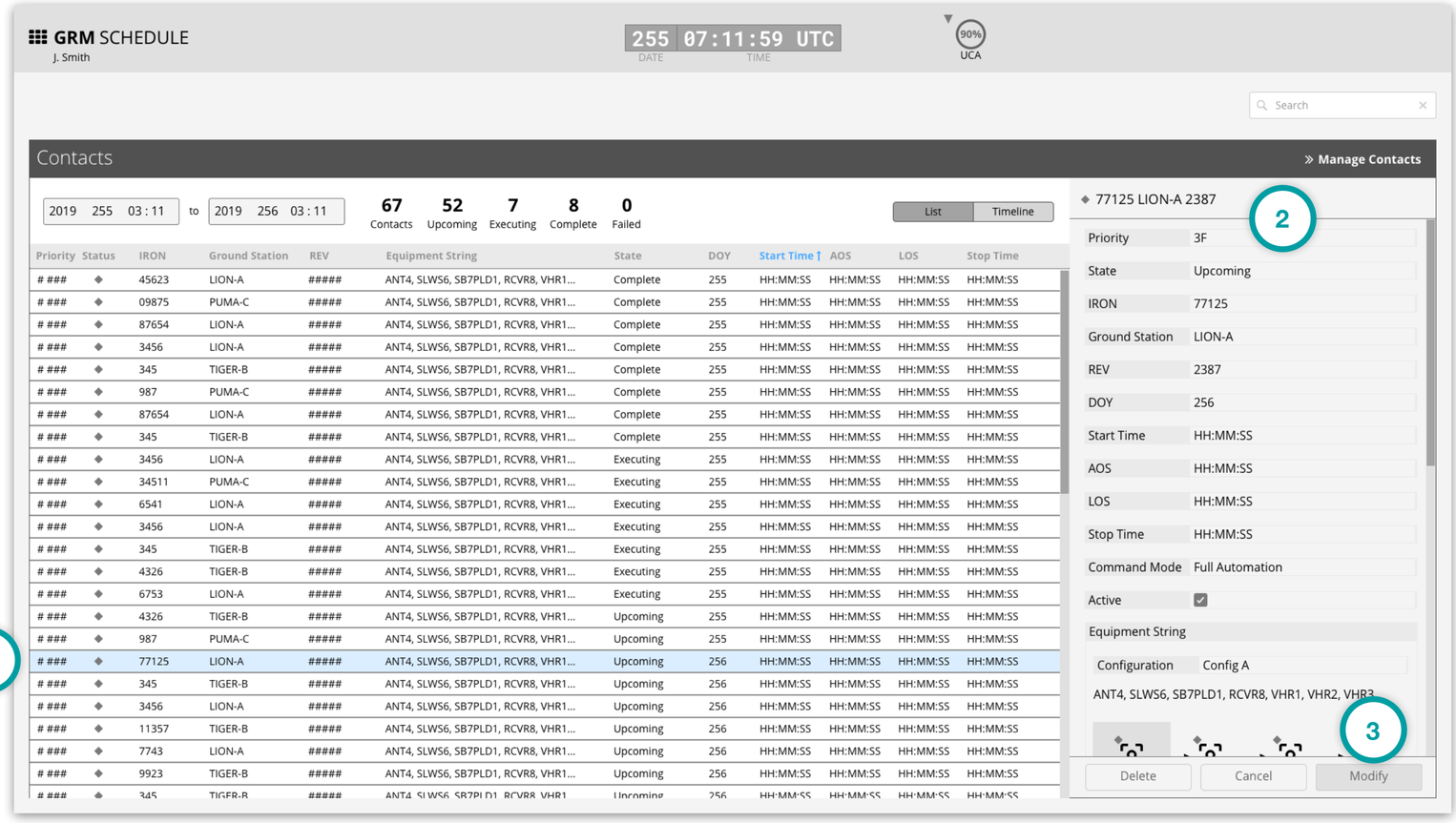
Schedule - Modify Contact Flow

Step

Select Contact to Modify.

Features & Interactions

1. The selected contact is highlighted in the schedule.
2. Contact details are displayed in the Manage Contacts Pane.
3. Modify button is enabled.



GRM Wireframes.pdf, page 57

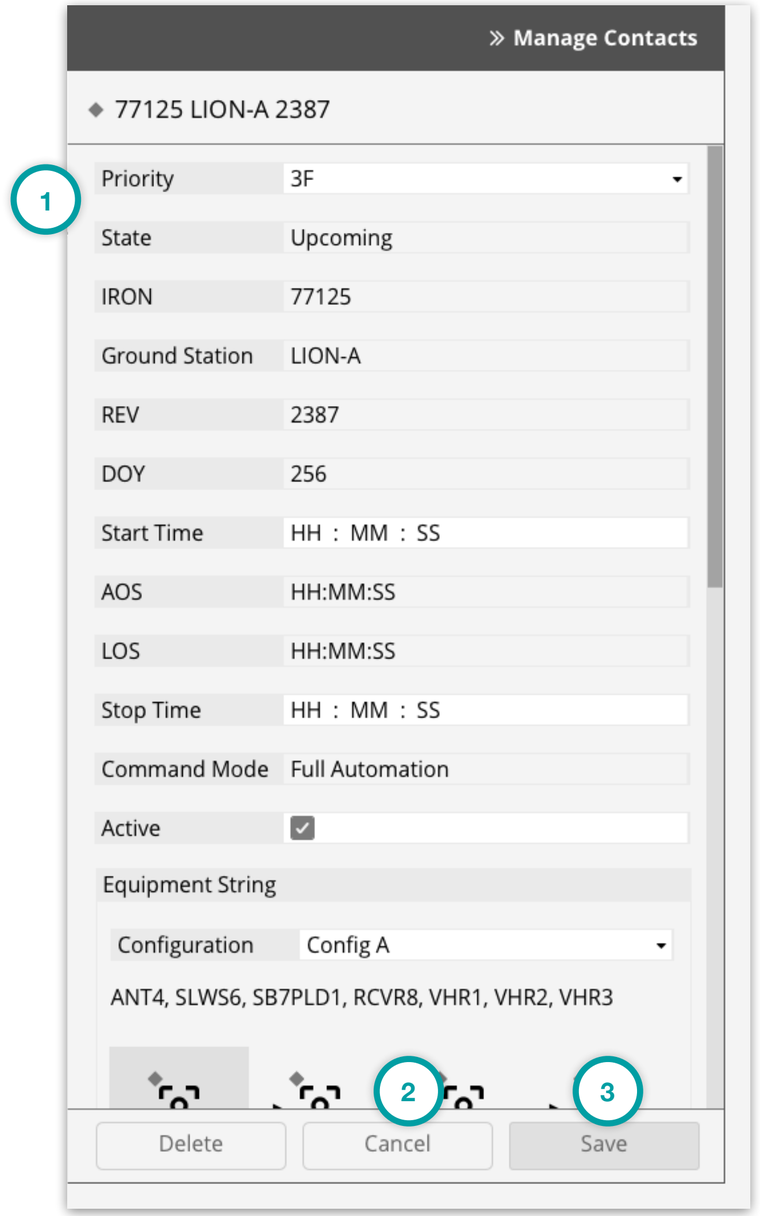
Schedule - Modify Contact Flow

Step

Modify contact.

Features & Interactions

1. Contact conditions may Allow, Limit, or Prohibit fields to be editable.
2. Cancel returns operator to the read-only version of the contact details.
3. Save submits the operator's changes.



GRM Wireframes.pdf, page 58

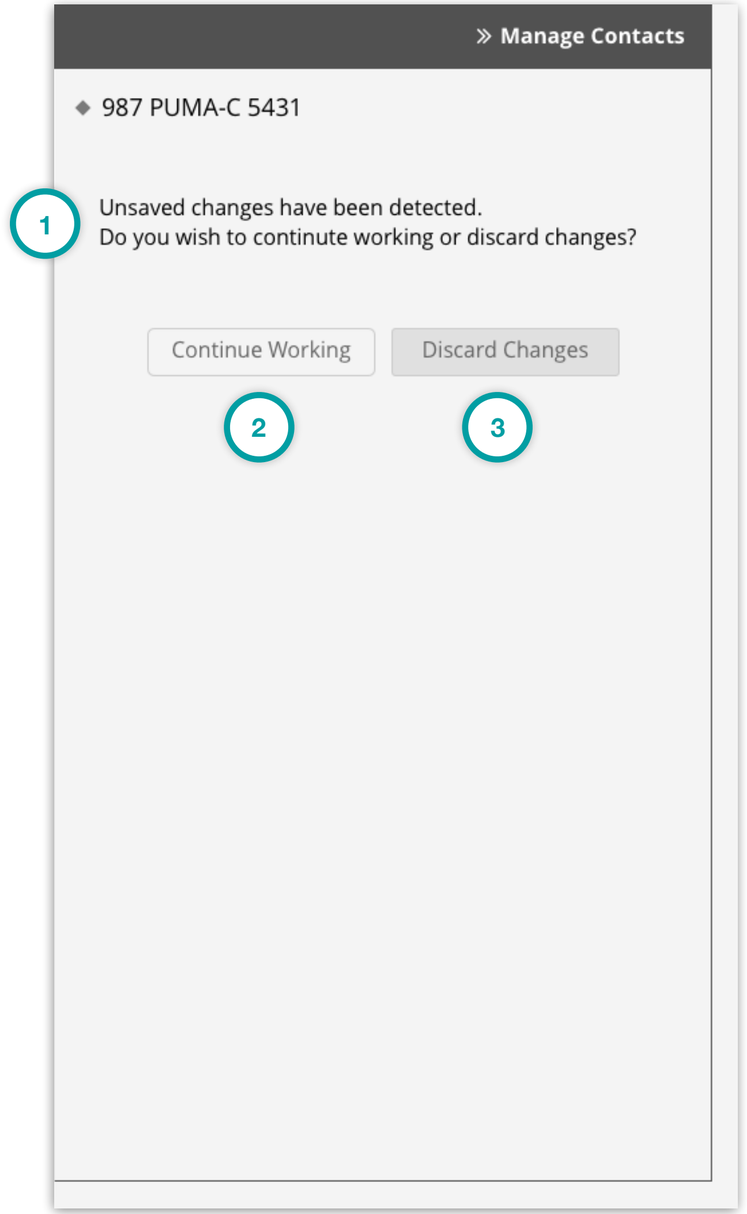
Schedule - Modify Contact Flow

Step

Operator navigates away from modifying a contact when there are unsaved changes.

Features & Interactions

1. Unsaved changes detected message.
2. Continue Working returns operator to the previous editable pane.
3. Discard Changes does not submit changes and navigates operator to intended location.



GRM Wireframes.pdf, page 64

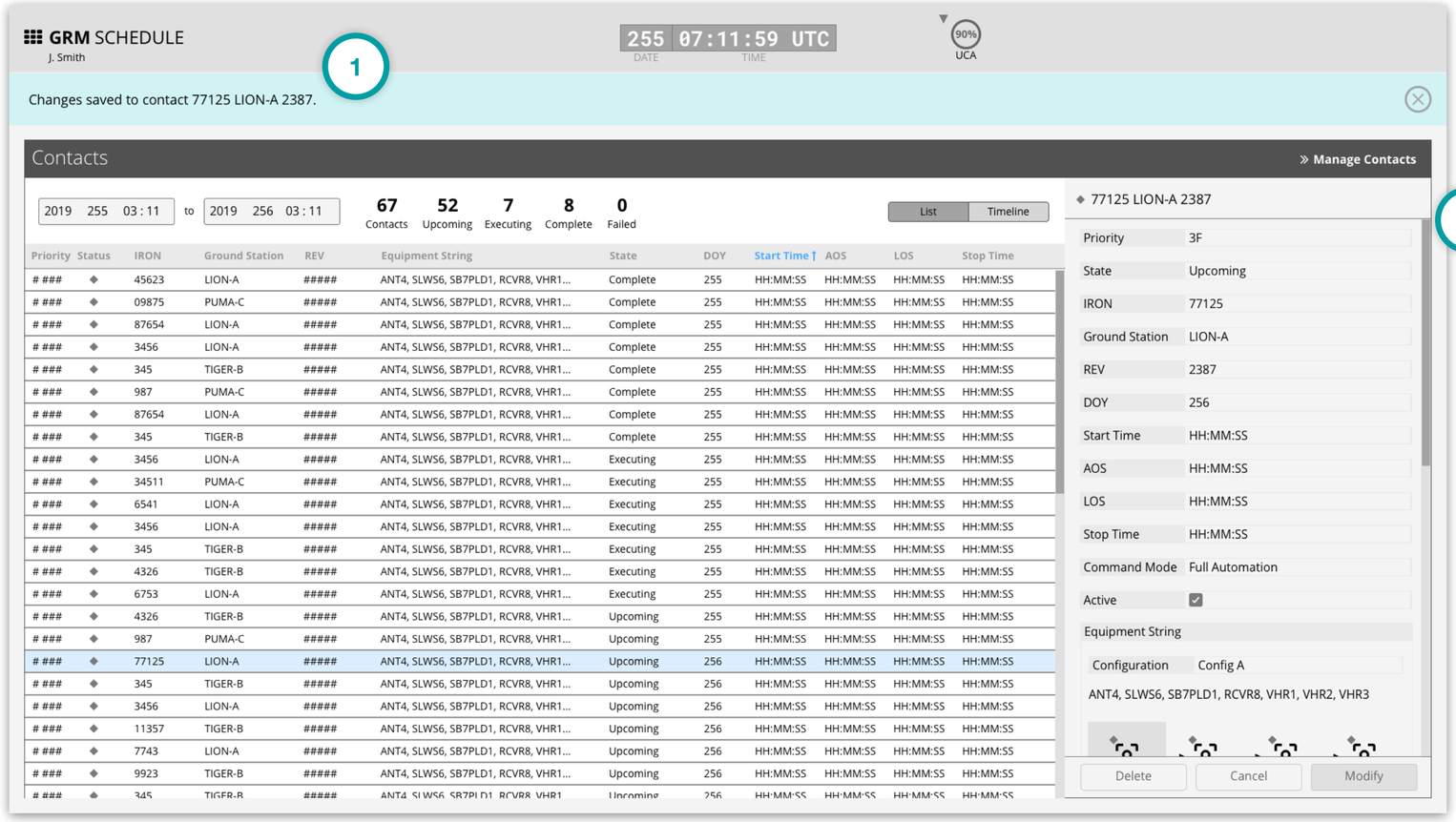
Schedule - Modify Contact Flow

Step

After clicking “Save”, a Notification Banner displays showing that the changes have been saved.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar indicating which contact has been changed. The operator can dismiss the banner by clicking the “X” button on the right.
2. Manage Contacts Pane returns read-only view of the selected contact details.

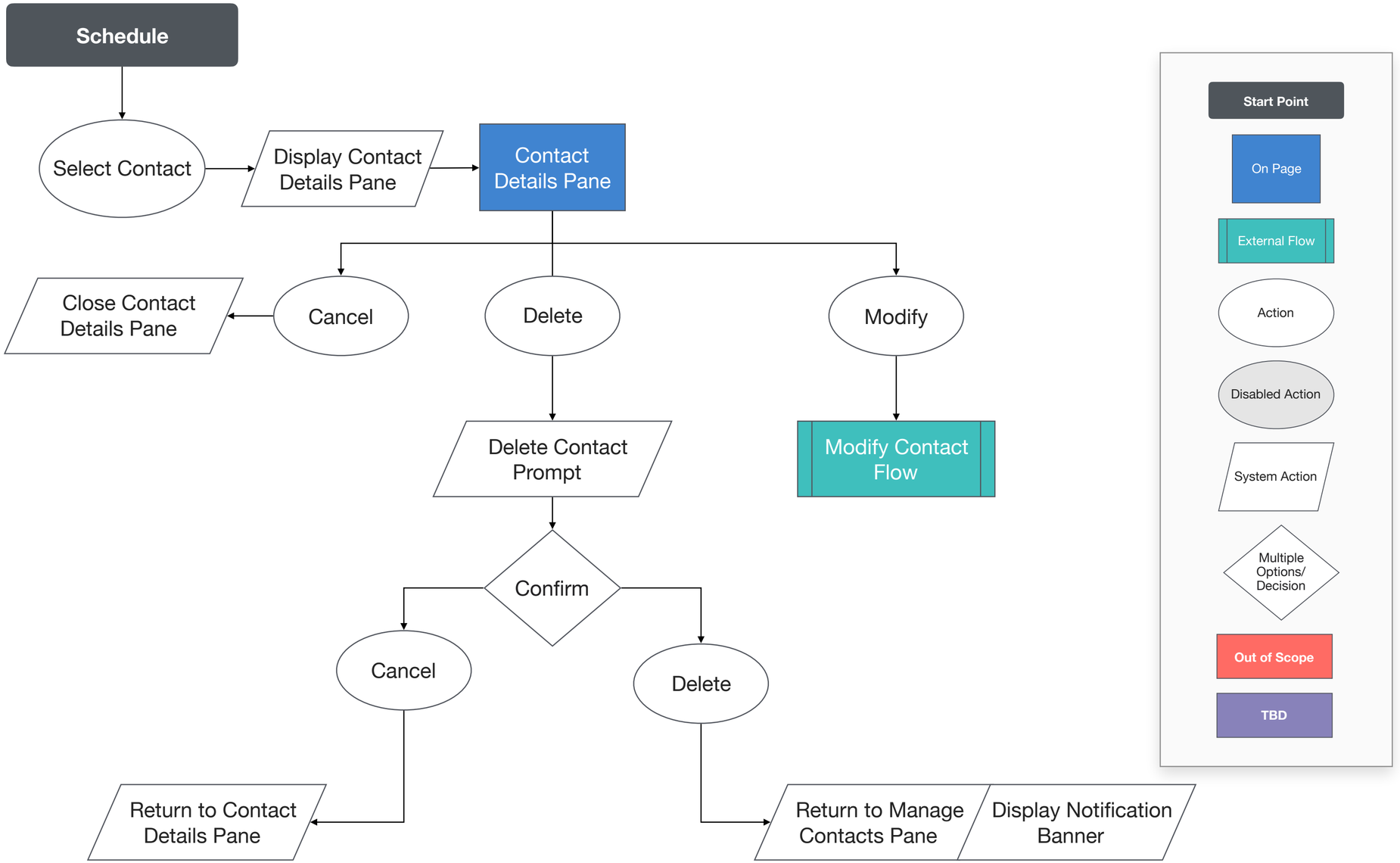


GRM Wireframes.pdf, page 59

Schedule - Delete Contact Flow

This user flow shows the content and actions involved in deleting a contact.

The following pages in this document (74-76) provide a full description of each step alongside the correlating screen of the application.



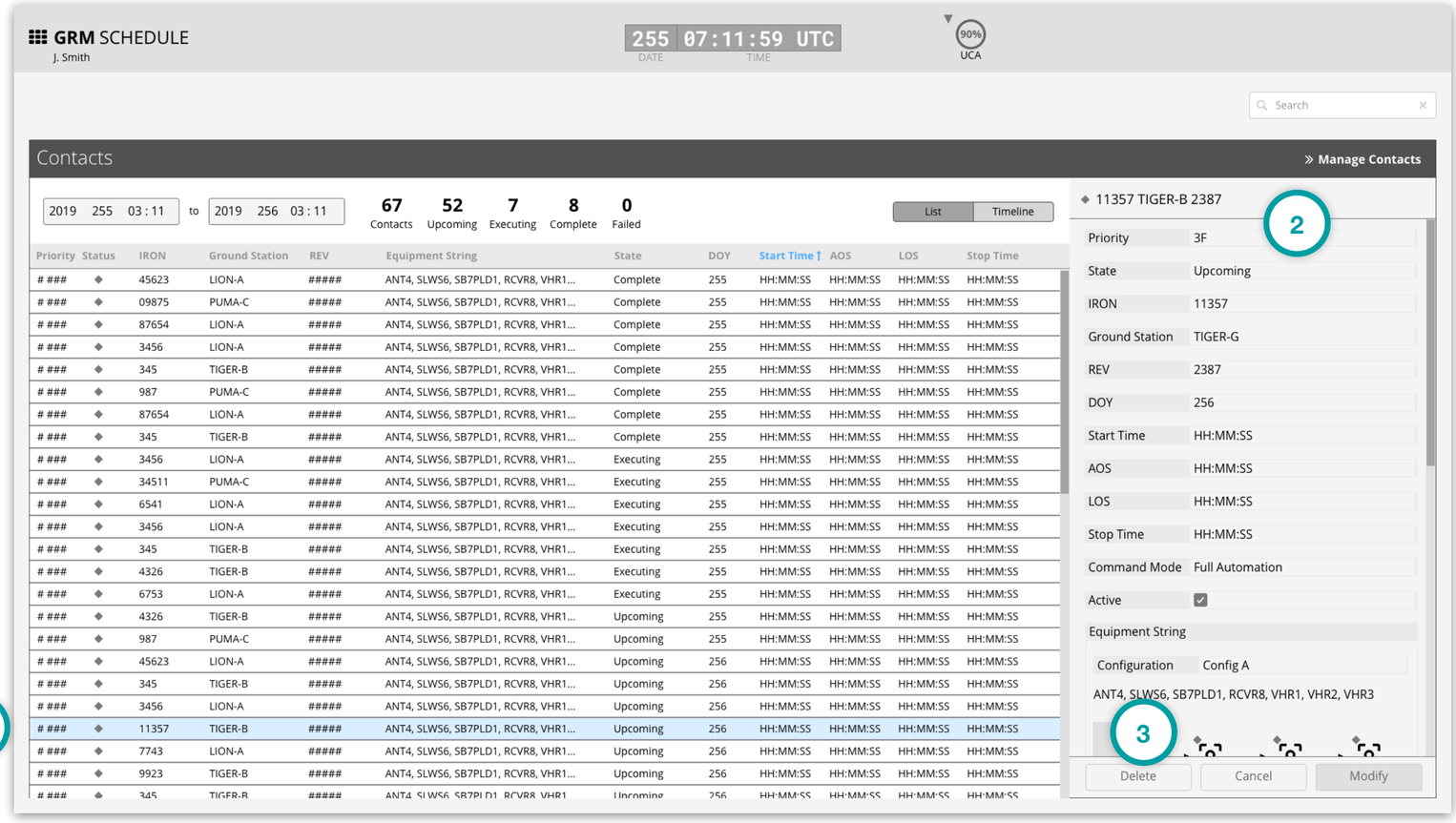
Schedule - Delete Contact Flow

Step

Select contact to delete.

Features & Interactions

1. The selected contact is highlighted in the schedule.
2. Contact details are displayed in the Manage Contacts Pane.
3. Delete button is enabled and clicked.



GRM Wireframes.pdf, page 60

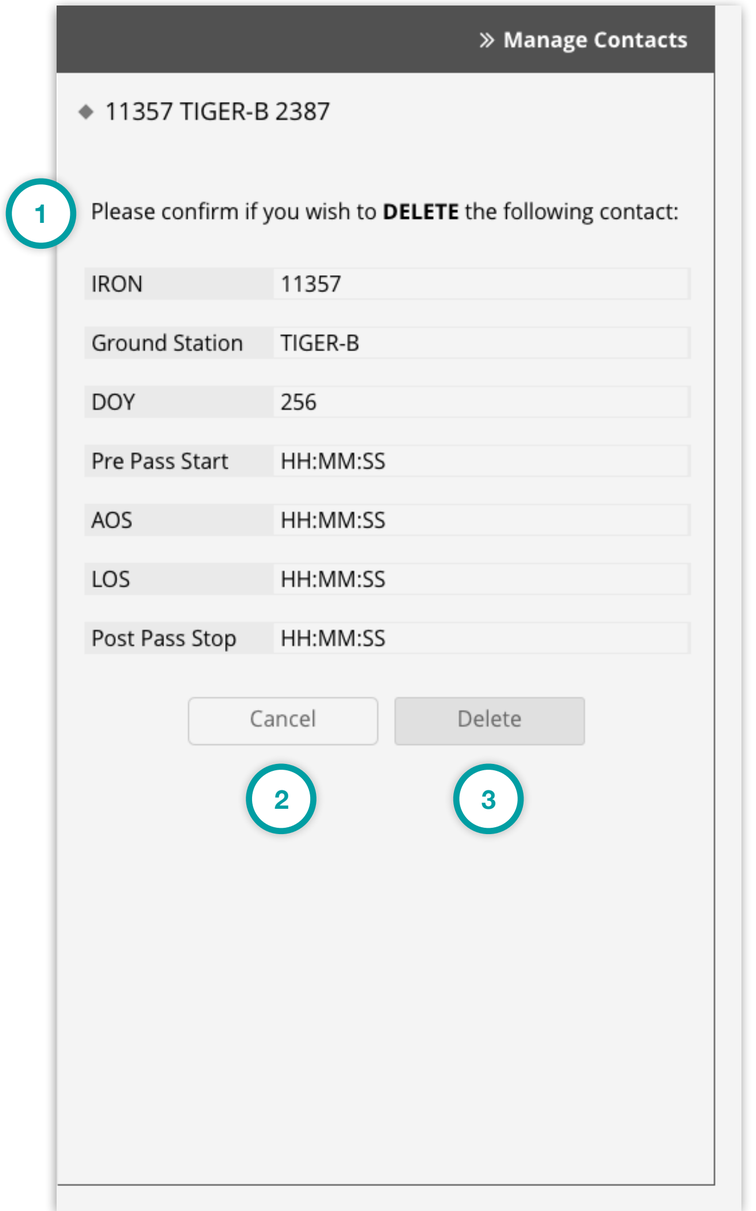
Schedule - Delete Contact Flow

Step

Confirm delete action.

Features & Interactions

1. Confirmation message and contact summary are displayed to the operator.
2. Cancel returns operator to the previous contact details.
3. Deletes the contact.



GRM Wireframes.pdf, page 61

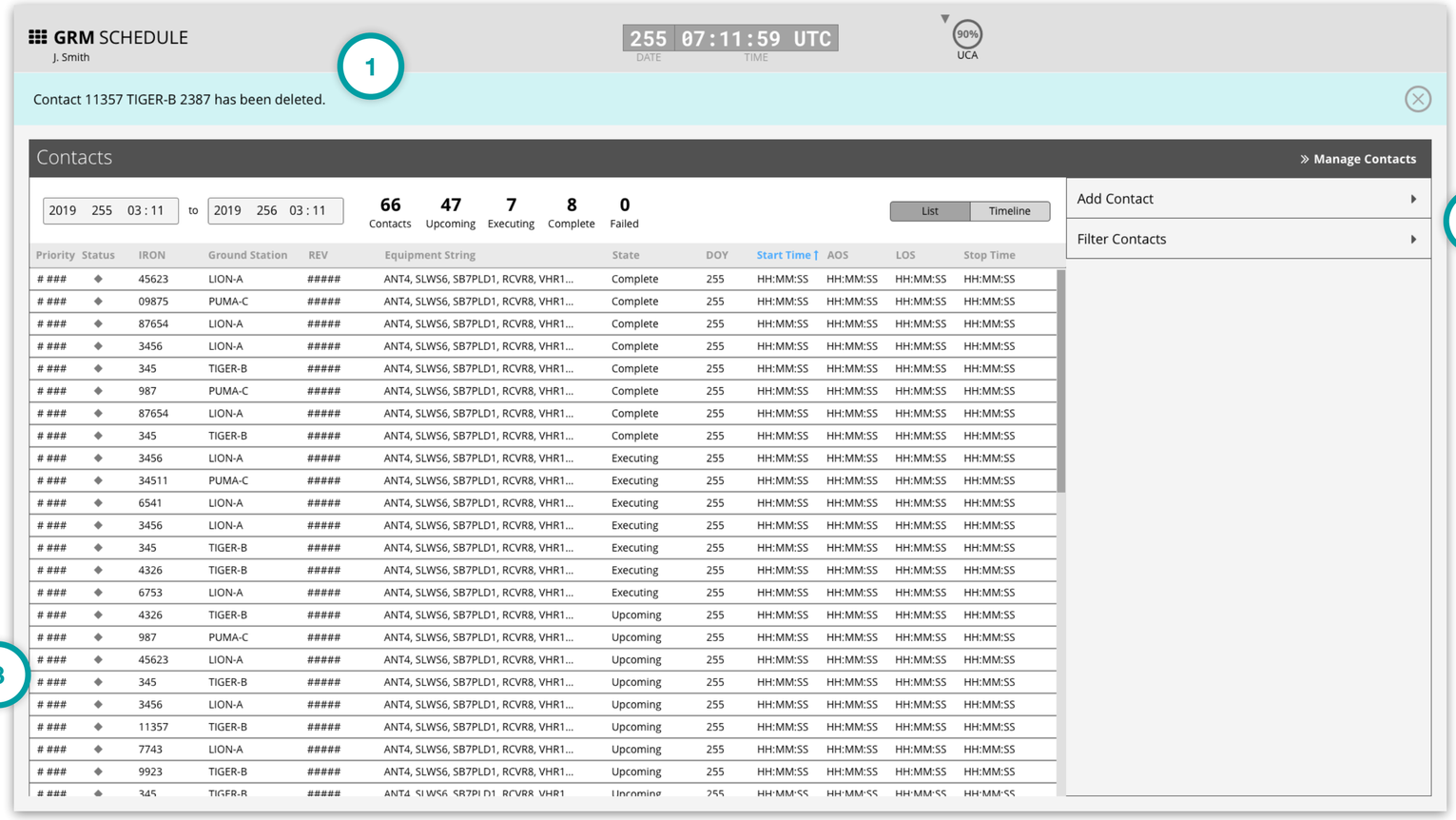
Schedule - Delete Contact Flow

Step

After clicking “Delete”, a Notification Banner displays showing that the contact has been deleted.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar indicating which contact has been deleted. The operator can dismiss the banner by clicking the “X” button on the right.
2. Manage Contacts Pane returns to root level menu.
3. Deleted contact is no longer present in the Schedule.

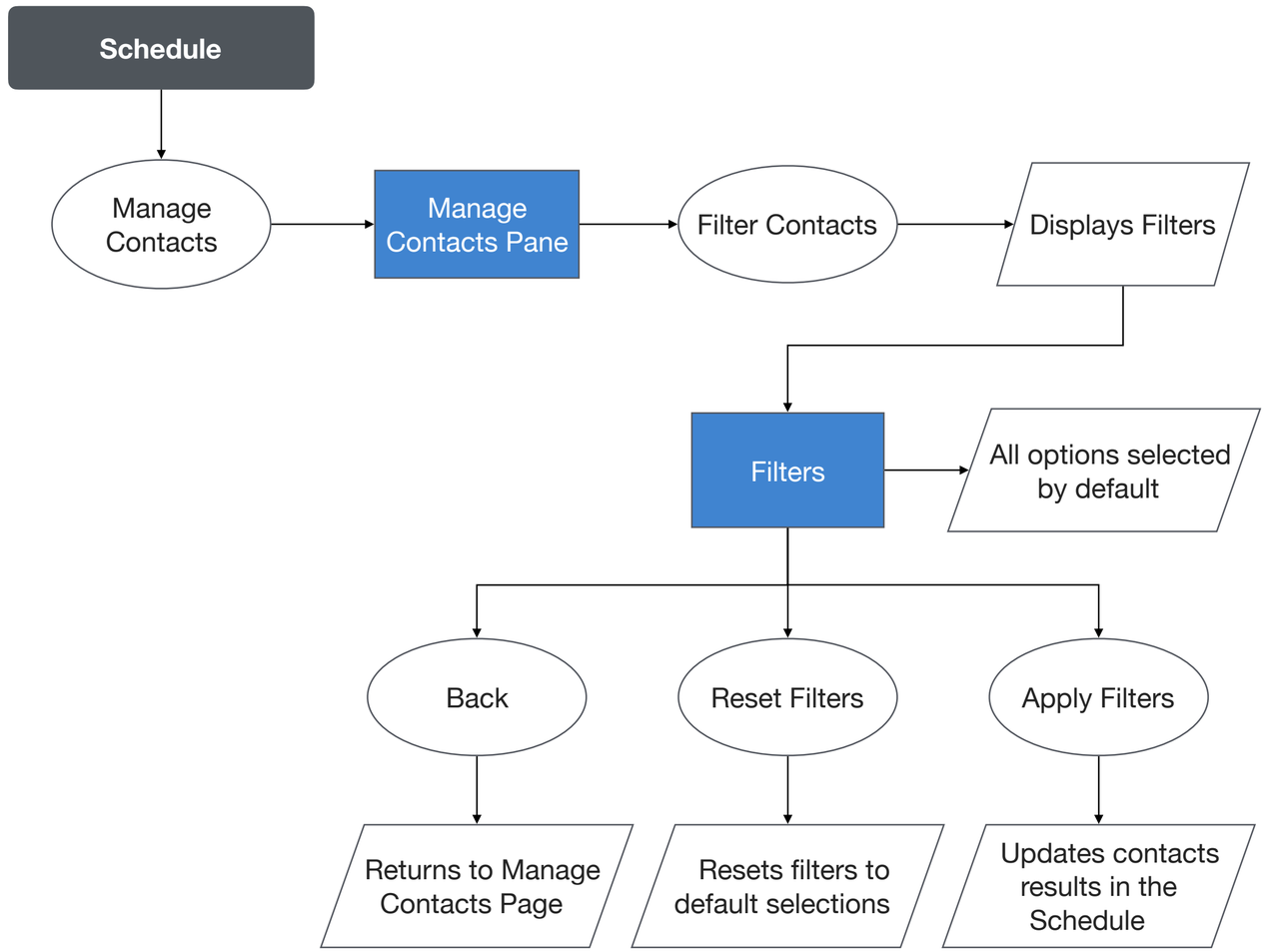


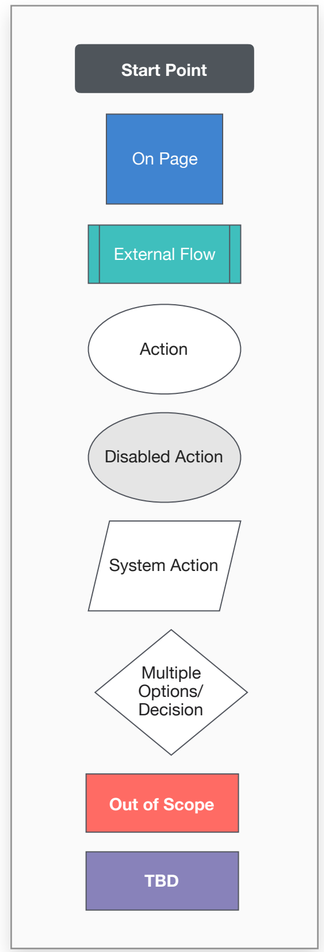
GRM Wireframes.pdf, page 62

Schedule - Filter Contacts Flow

This user flow shows the content and actions involved in filtering contacts.

The following pages in this document (78-81) provide a full description of each step alongside the correlating screen of the application.

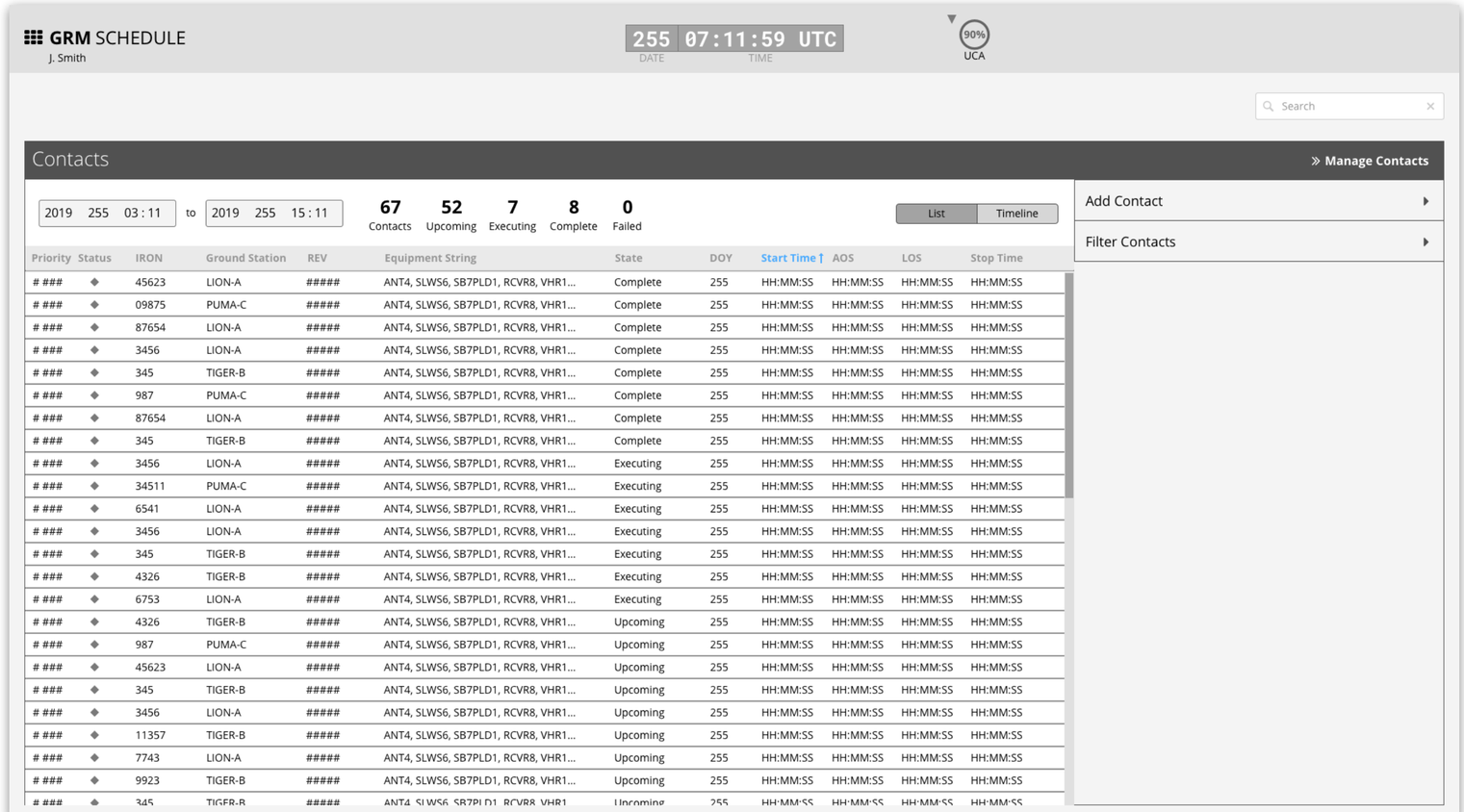




Schedule - Filter Contacts Flow

Step

Select “Filter Contacts.”



GRM Wireframes.pdf, page 65

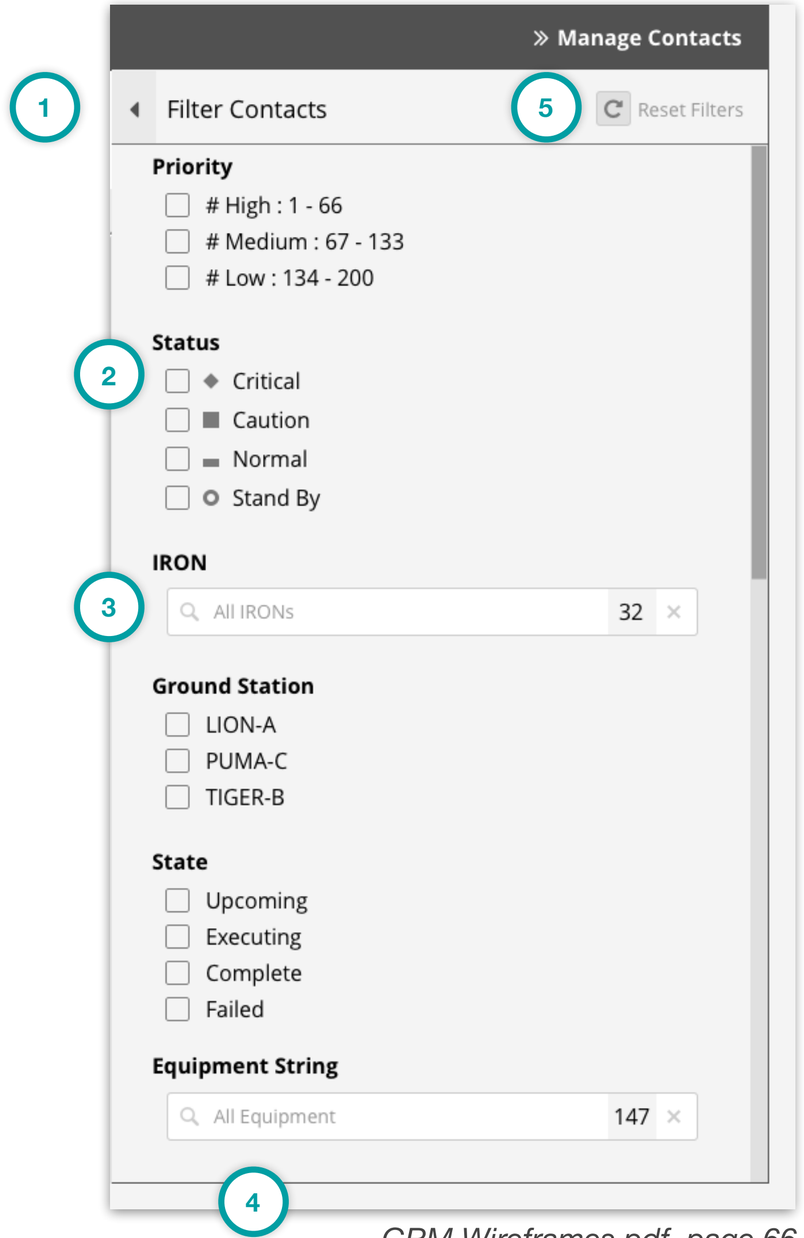
Schedule - Filter Contacts Flow

Step

Review available filters.

Features & Interactions

1. Back button returns user to the root level Manage Contacts Menu.
2. It is recommended to use check boxes or radio buttons when there are fewer than 5 options in a data set.
3. It is recommended to use a Search field when there are more than 10 options or a dropdown list if there are fewer than 10 but more than 5 options in a data set.
4. By default, no filters are applied and all contacts for the specified duration are displayed in the Schedule.
5. An operator may select “Reset Filters” to return filters back to the default state.



GRM Wireframes.pdf, page 66

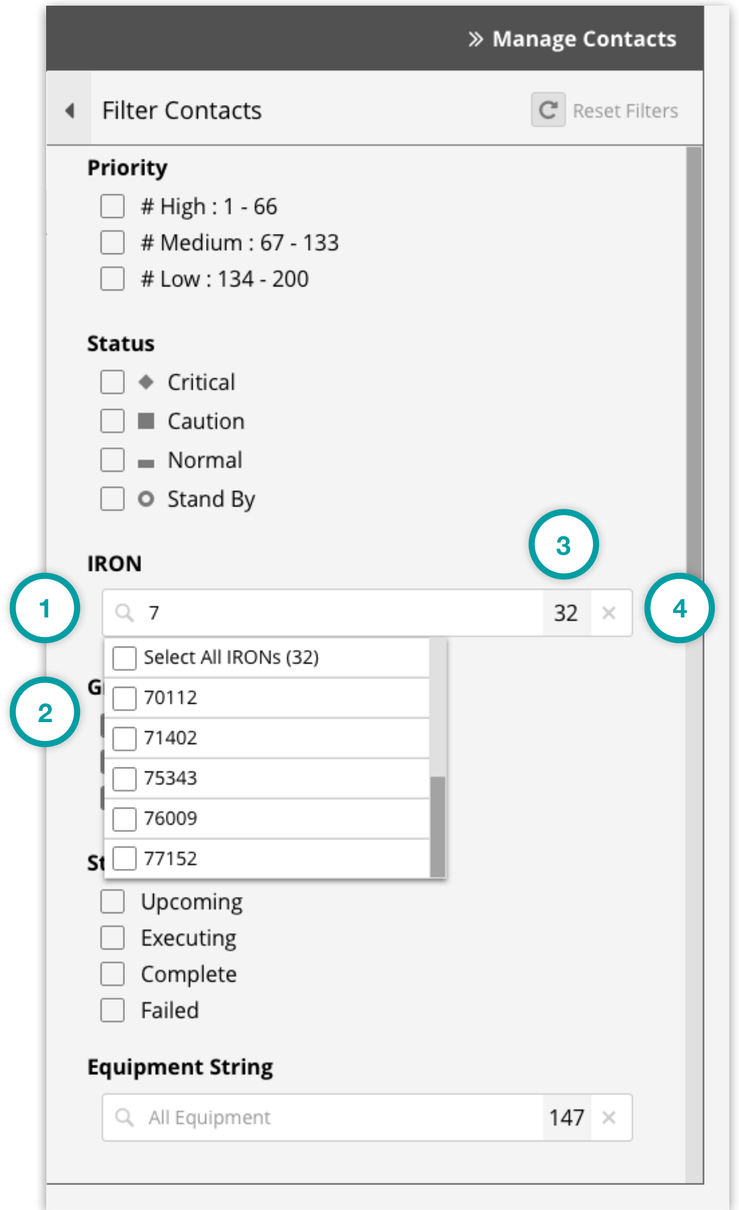
Schedule - Filter Contacts Flow

Step

Filter by specific IRON.

Features & Interactions

1. All IRONs are displayed by default.
2. One, many or all options may be selected.
3. The counter reflects how many IRONs have been selected.
4. The value may be quickly cleared by clicking the “x.”



GRM Wireframes.pdf, page 67

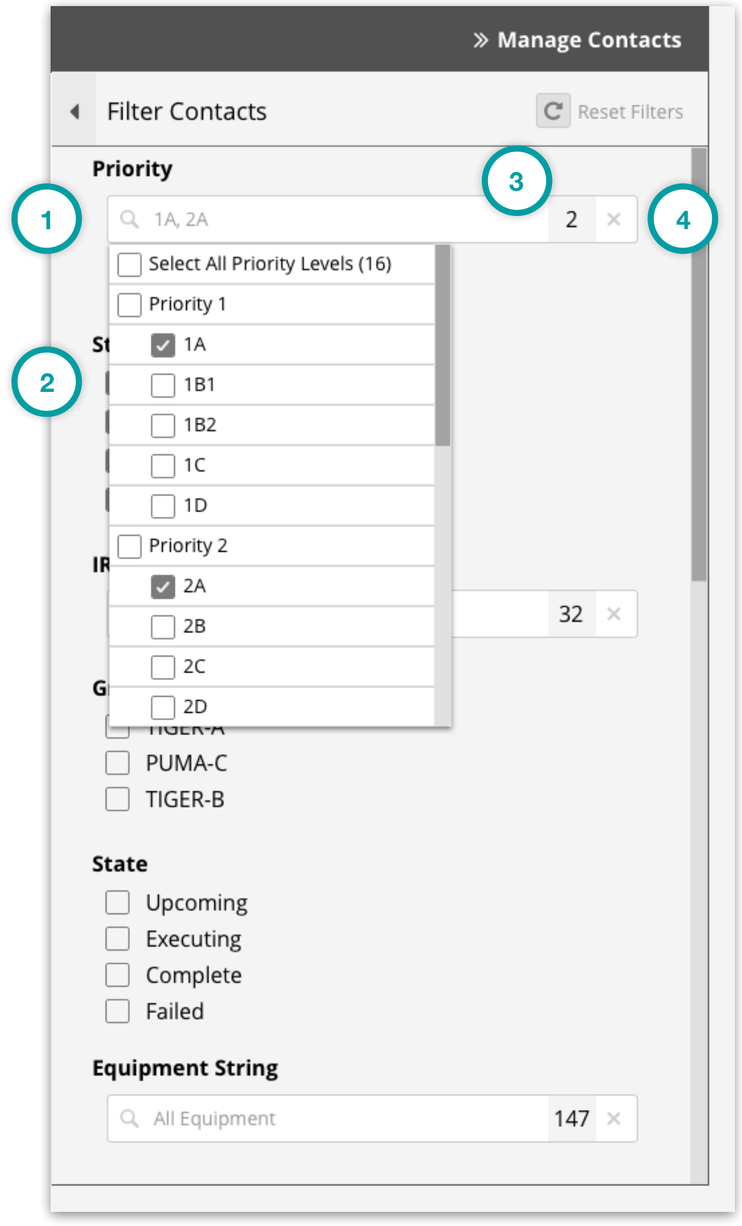
Schedule - Filter Contacts Flow

Step

Review alternate Priority Levels.

Features & Interactions

1. No filters are applied to Priority by default.
2. One, many or all options may be selected. Options are nested by Priority Ground and individual Priority Levels.
3. The counter reflects how many Priority Levels have been selected.
4. The value may be quickly cleared by clicking the “x.”



GRM Wireframes.pdf, page 68

Equipment Manager

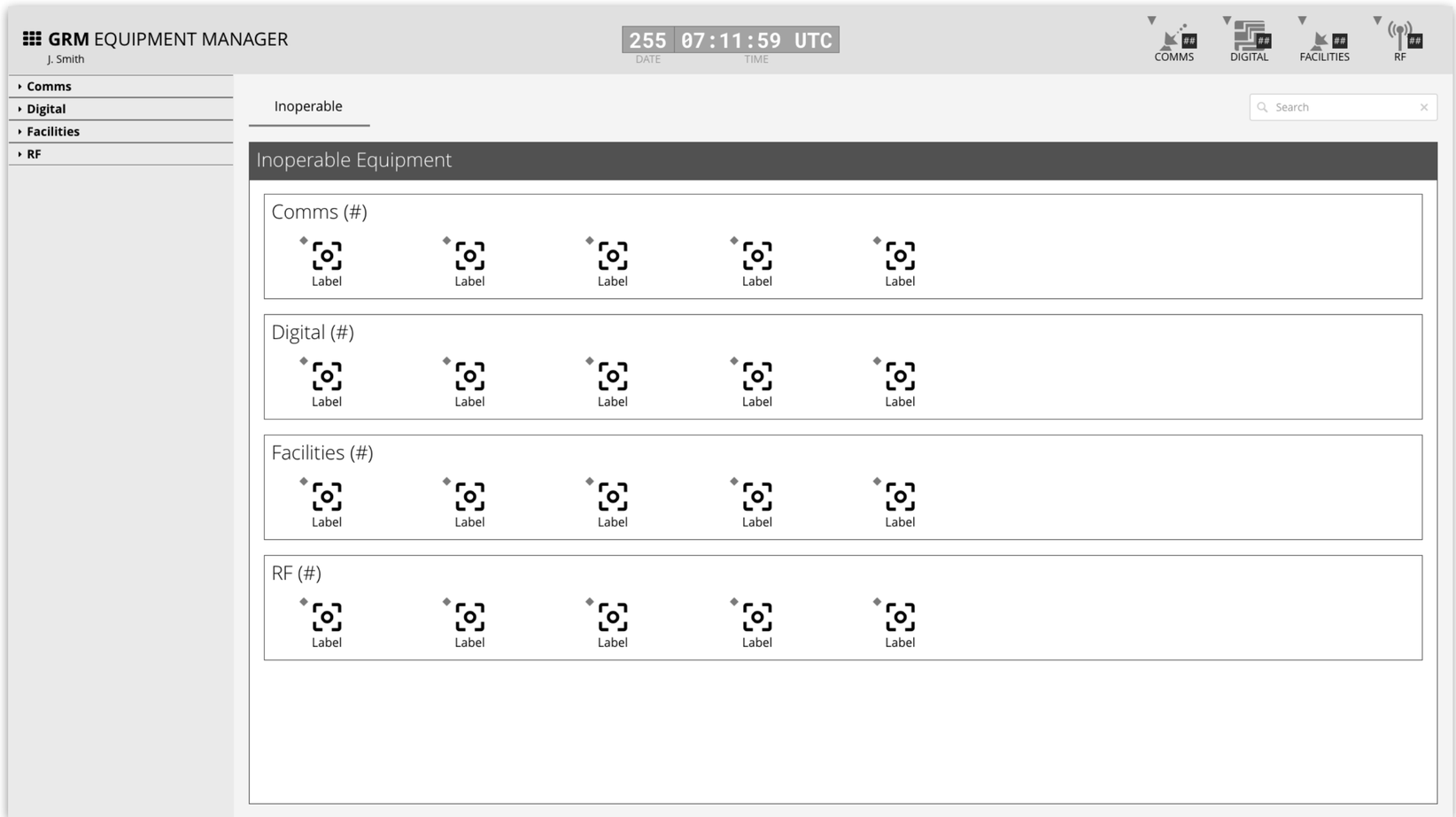
Equipment Manager Overview

The Equipment Manager application consolidates all ground equipment in one place.

The home page immediately provides the operator a list of all inoperable ground equipment. The operator can navigate to view the full details of specific inoperable equipment from here by clicking on the equipment icon in the grid.

The operator can view the full details of any specific ground equipment by navigating through the left side tree.

The equipment hierarchy and category names should be configured by each squadron at set up time.



GRM Wireframes.pdf, page 70

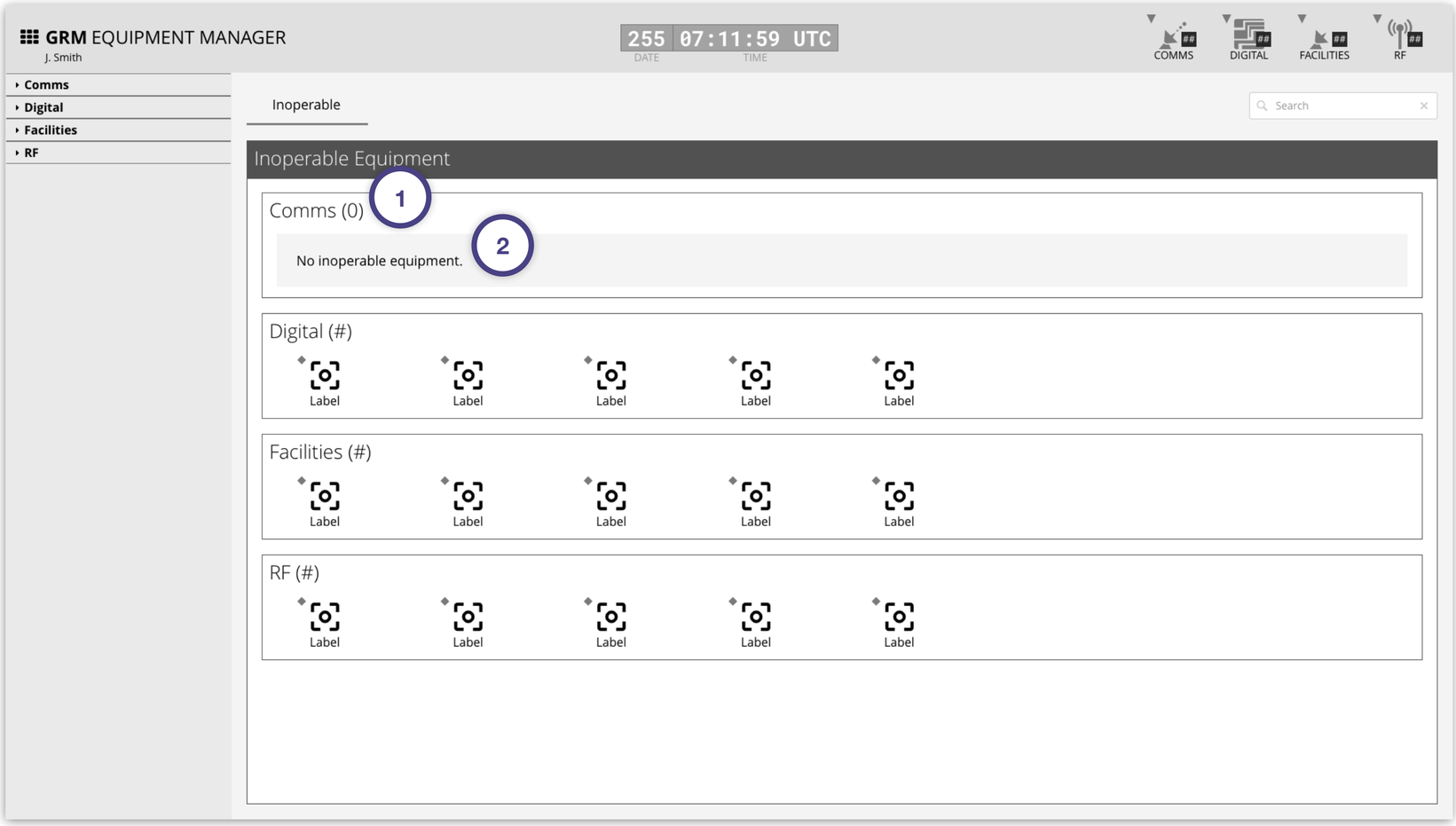
Equipment Manager - Inoperable Equipment Empty State

Functionality

Inoperable equipment empty state.

Features & Interactions

1. **Equipment Category Count**
   Count of zero (“Comms (0)”) inoperable equipment in this category.
2. **Messaging**
   Clear messaging is presented in the event no equipment in this category is currently inoperable.



GRM Wireframes.pdf, page 71

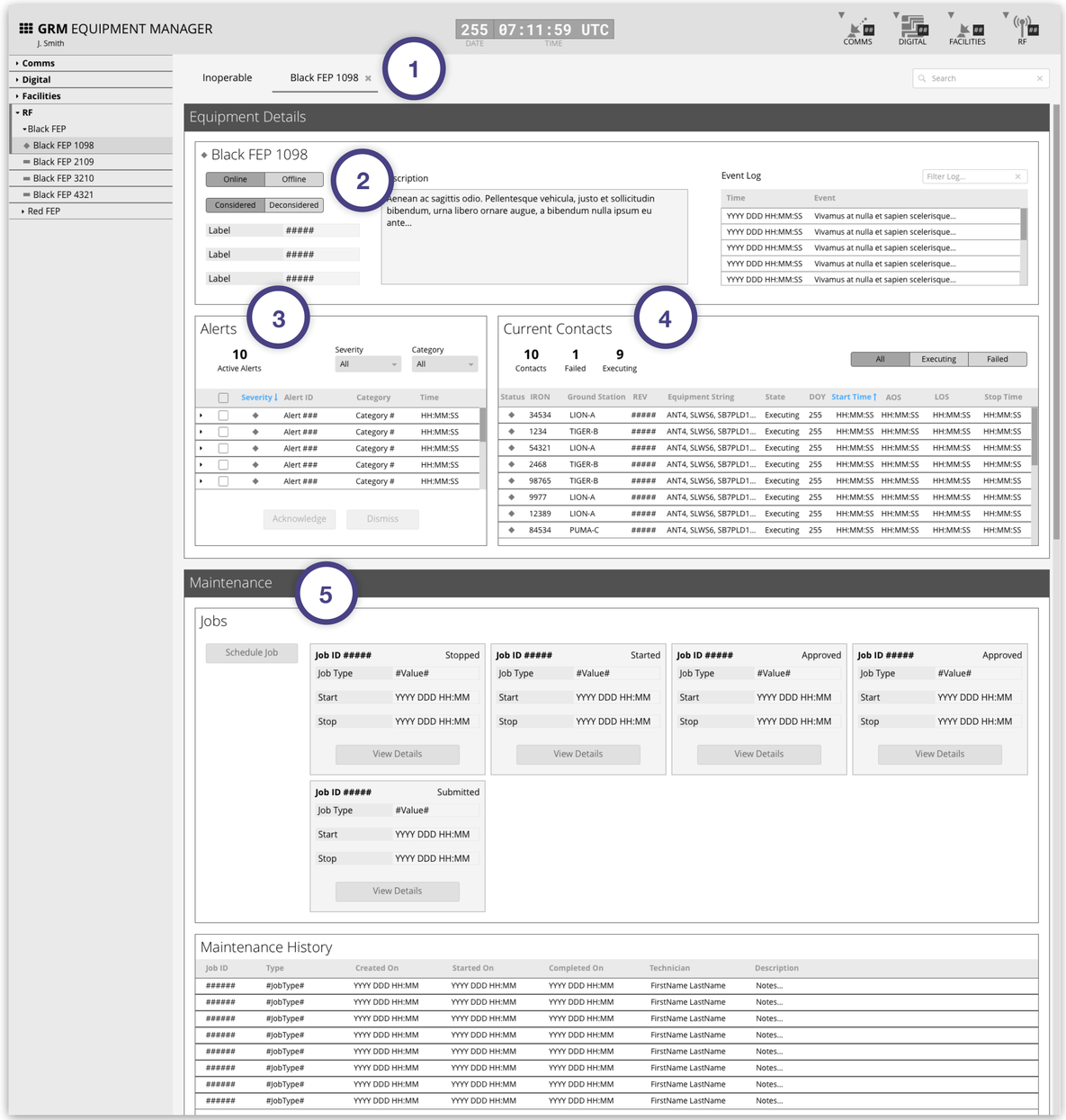
Equipment Manager - Equipment Details

Functionality

The Equipment Details pages contain comprehensive information and actions for an individual piece of ground equipment.

Features & Interactions

1. **Tabs**
   A new tab labeled with the name of the equipment appears to the right of the “Inoperable” home button when the operator navigates to any Equipment Details page. The operator can remove the tab by clicking the “X” button on the right.
2. **Toggles**
   Change online/offline and considered/deconsidered states.
3. **Alerts**
   A list of all current and past alerts for the related equipment.
4. **Current Contacts**
   All contacts currently executing that include the related equipment in their equipment string.
5. **Maintenance**
   View current maintenance jobs, schedule new jobs, and view a history of all maintenance jobs for the related equipment.



GRM Wireframes.pdf, page 72

Equipment Manager - Maintenance Job Details

Functionality

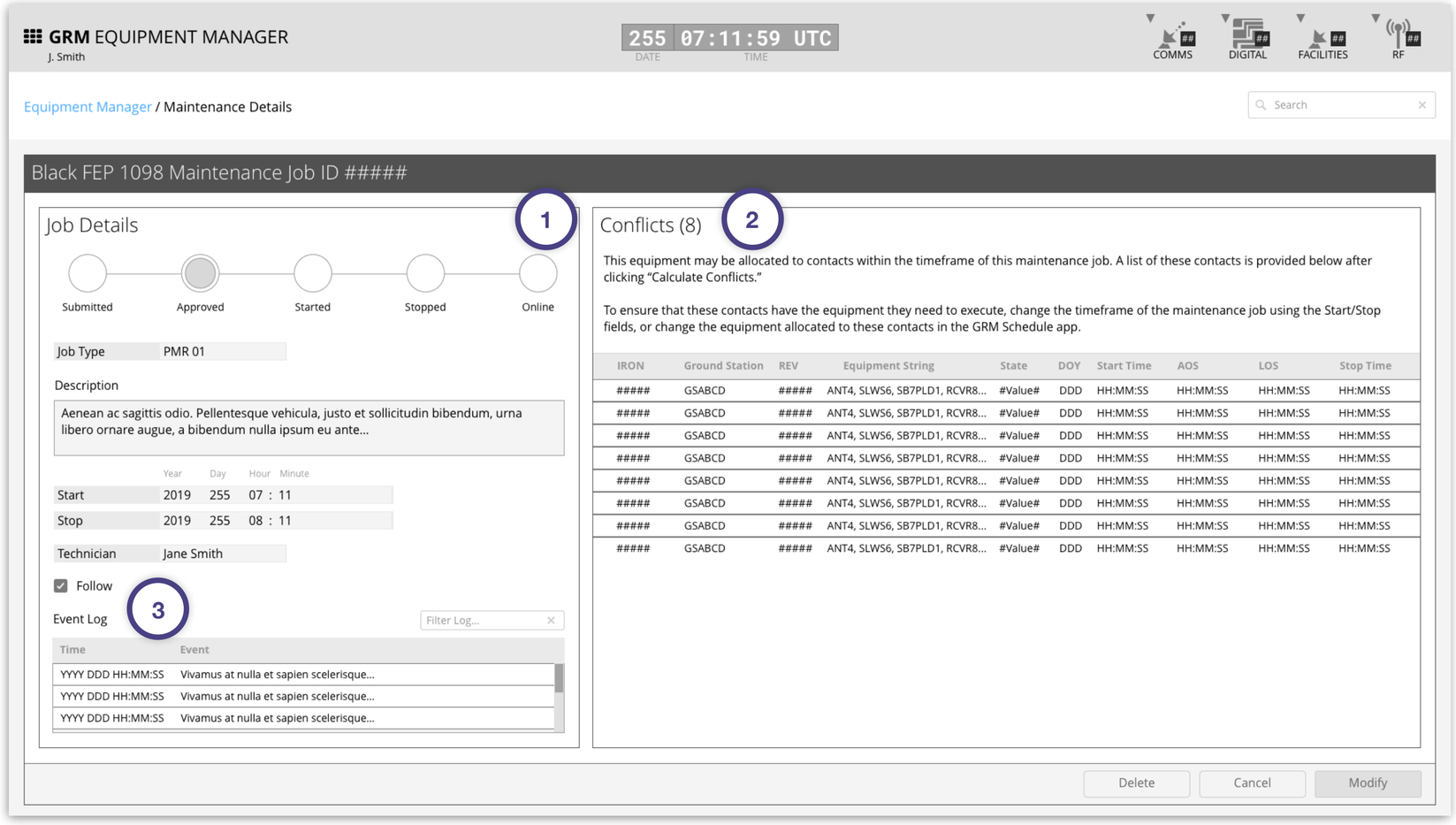
The Maintenance Details pages contain comprehensive information and actions for a maintenance job.

Features & Interactions

1. **Progress Tracker**
   A visualization of the steps involved in the job and an indication of the current progress. The number and taxonomy of these steps should be configured by each squadron at set up time.

2. **Conflicts**
   A list of conflicts with other contacts as a result of this equipment taken out of the resource pool for this time period. These contacts will not execute unless they are assigned to different equipment.

3. **Event Log**
   A log of events pertaining to the job, starting with the creation of the job.



GRM Wireframes.pdf, page 73

Equipment Manager - Maintenance Job Details - Continued

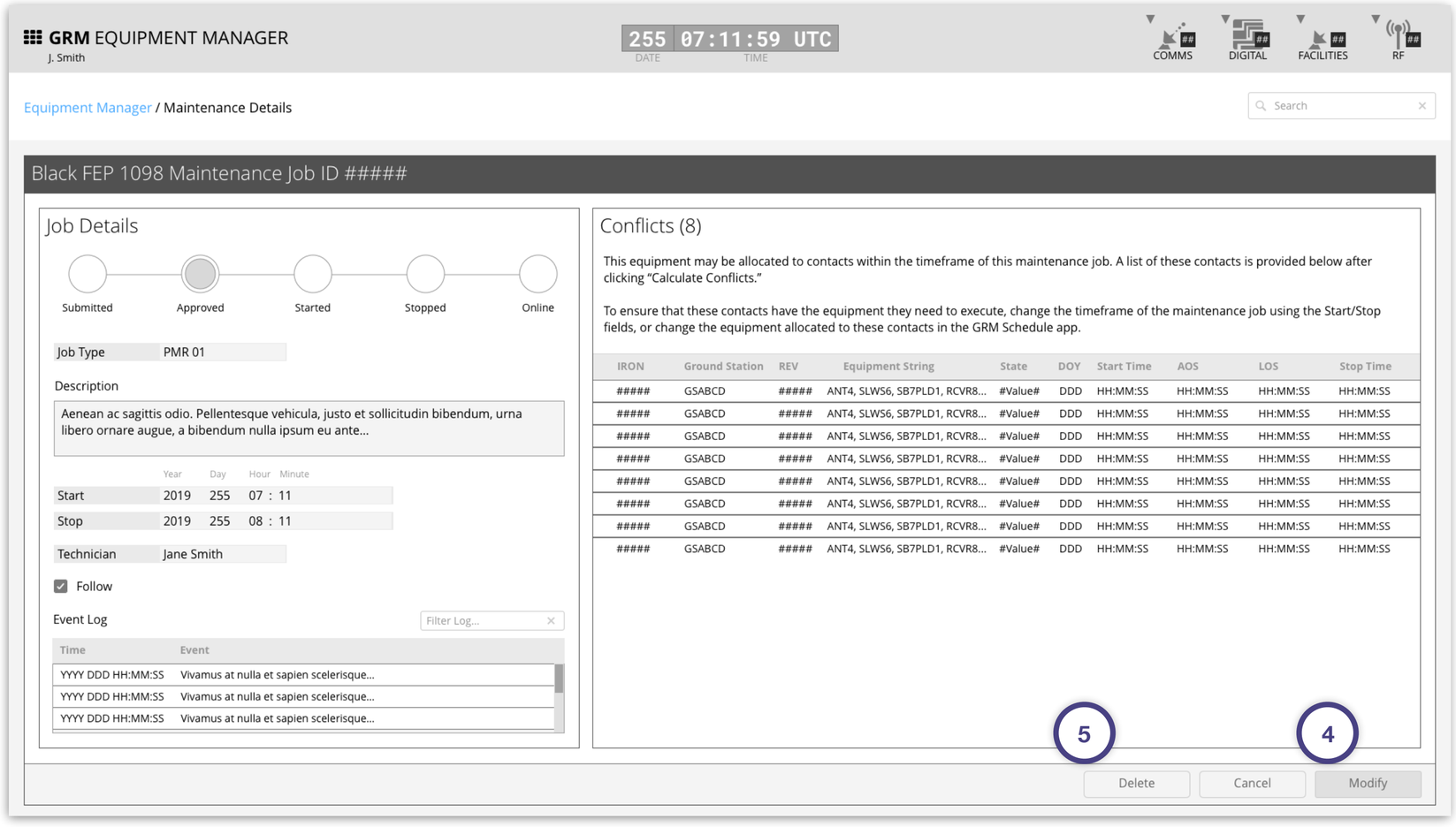
Functionality

The Maintenance Details pages contain comprehensive information and actions for a maintenance job.

Features & Interactions

4. **Modify**
   Modify the parameters (Job Type, Time, and/or Technician) of the job. Changing the time window requires the operator to calculate the new conflicts as a result of the change.

5. **Delete**
   Delete the job.

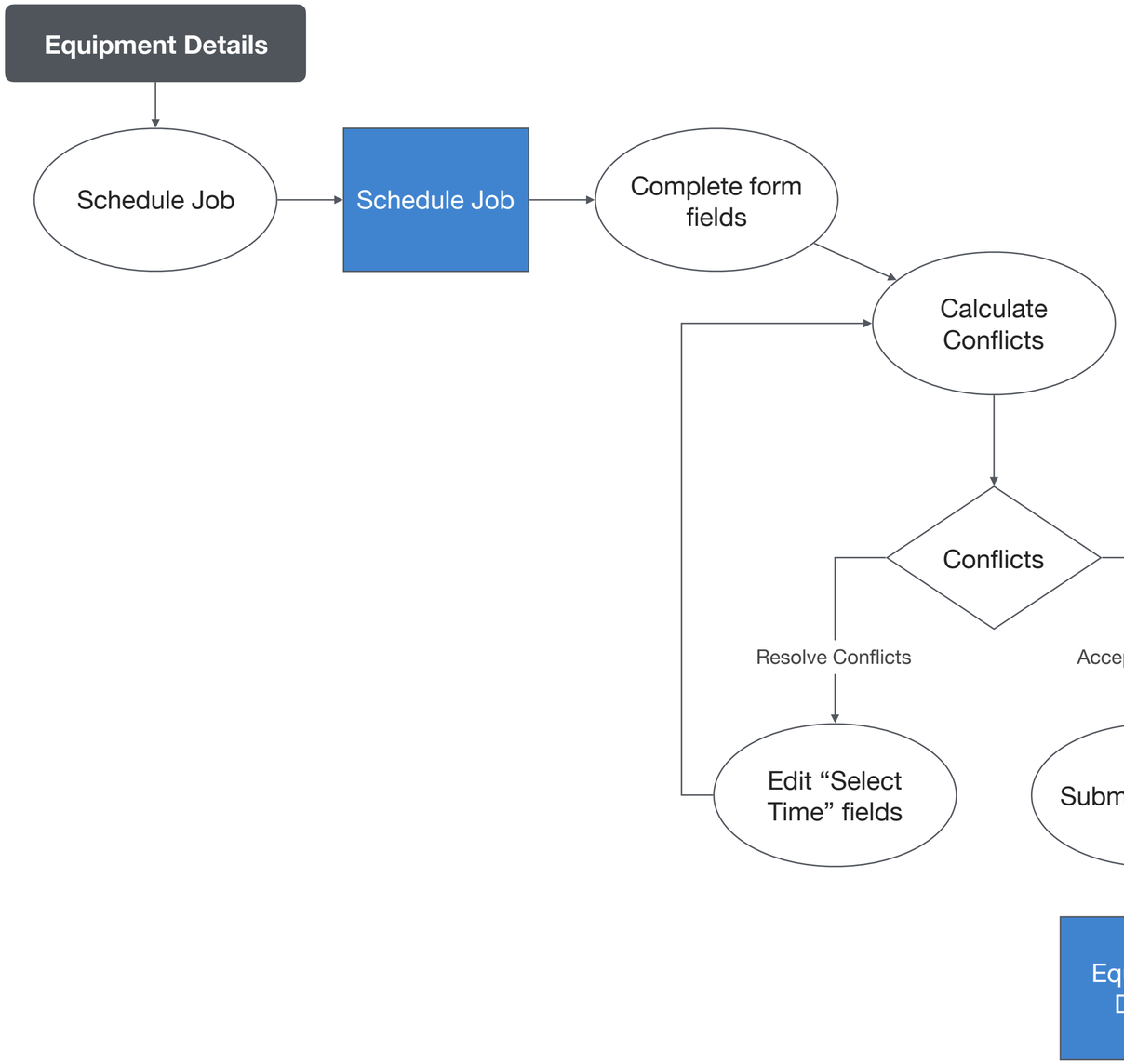


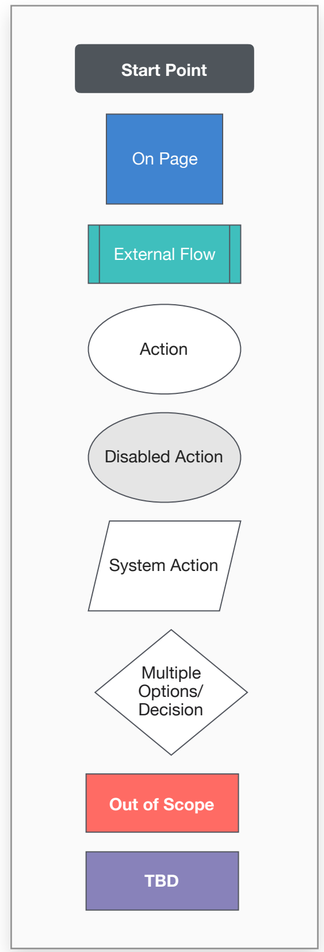
GRM Wireframes.pdf, page 73

Equipment Manager - Schedule Maintenance Job Flow

This user flow shows the content and actions involved in scheduling a maintenance job.

The following pages in this document (89-94) provide a full description of each step alongside the correlating screen of the application.

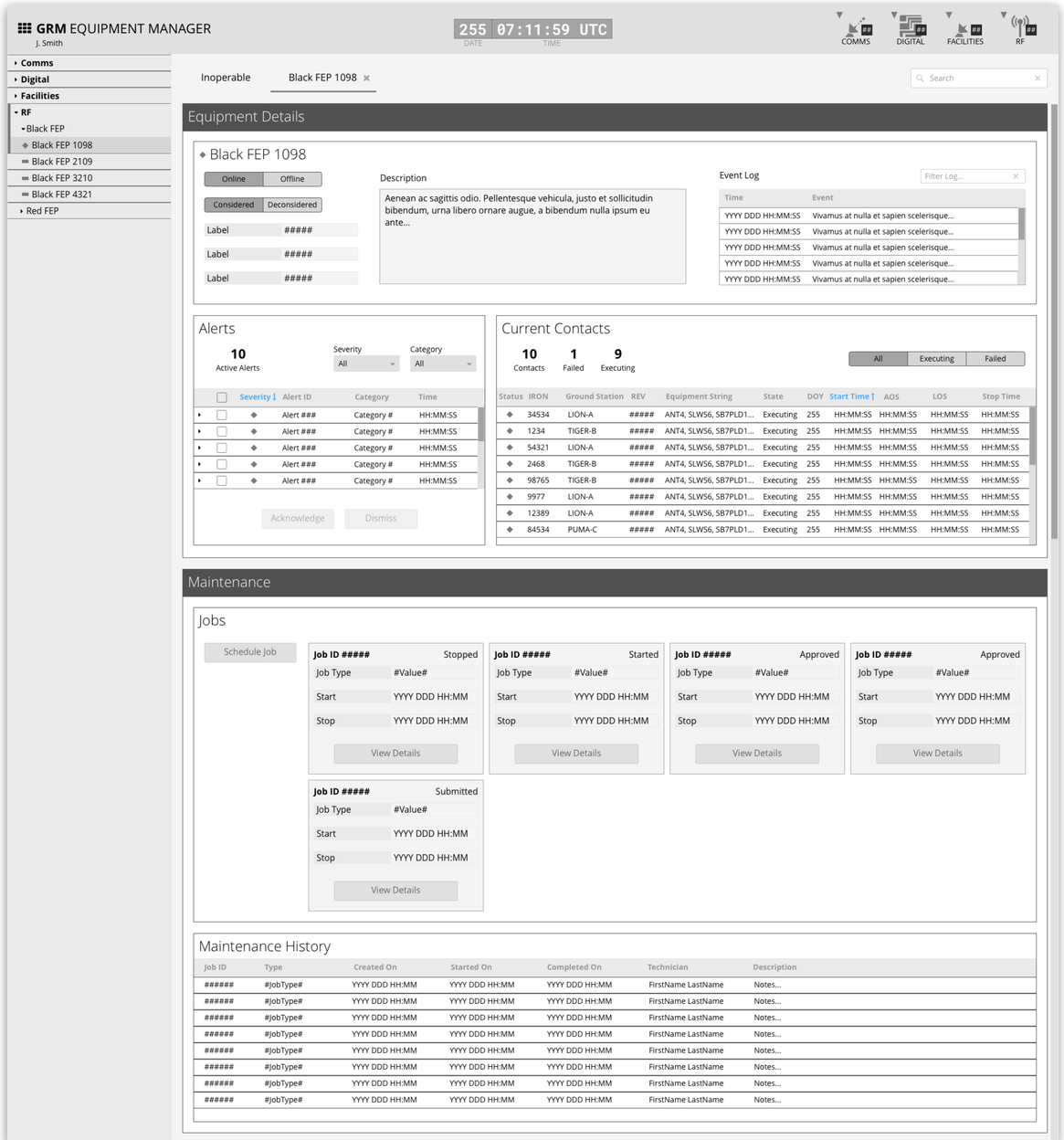




Equipment Manager - Schedule Maintenance Job Flow

Step

From the Equipment Details page, click “Schedule Job.”



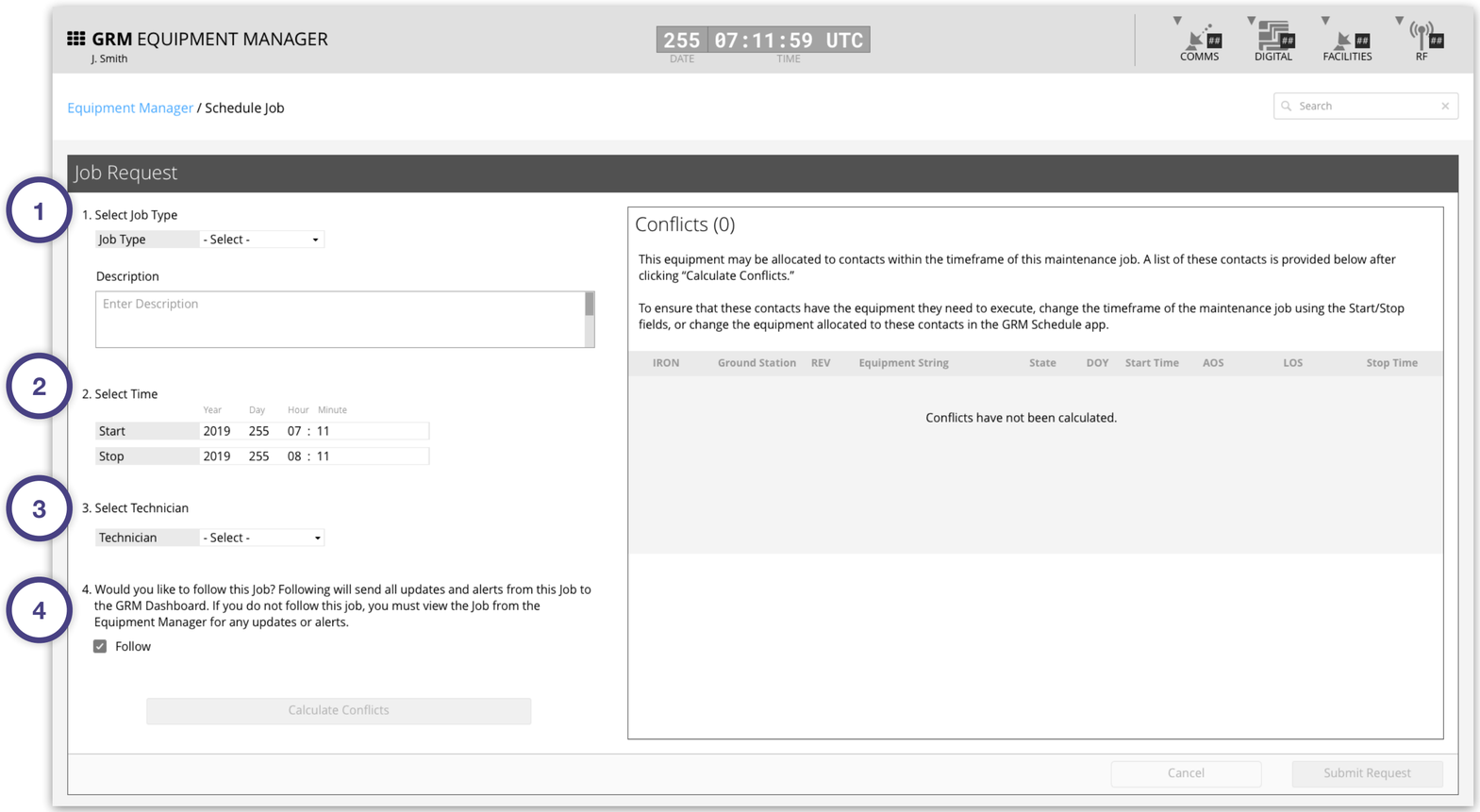
Equipment Manager - Schedule Maintenance Job Flow

Step

Complete the form fields.

Features & Interactions

1. Select a Job Type, then provide any additional clarification in the Description field. The options available in this list should be configured by each squadron at set up time.
2. Select a time window for the job to be completed within. The equipment will be taken out of the resource pool during this window.
3. Select a Technician. The options available in this list should be configured by each squadron at set up time.
4. Indicate whether to “Follow” this job. Following ensures that any alerts related to this job surface in the alerts area of the Dashboard application.



GRM Wireframes.pdf, page 76

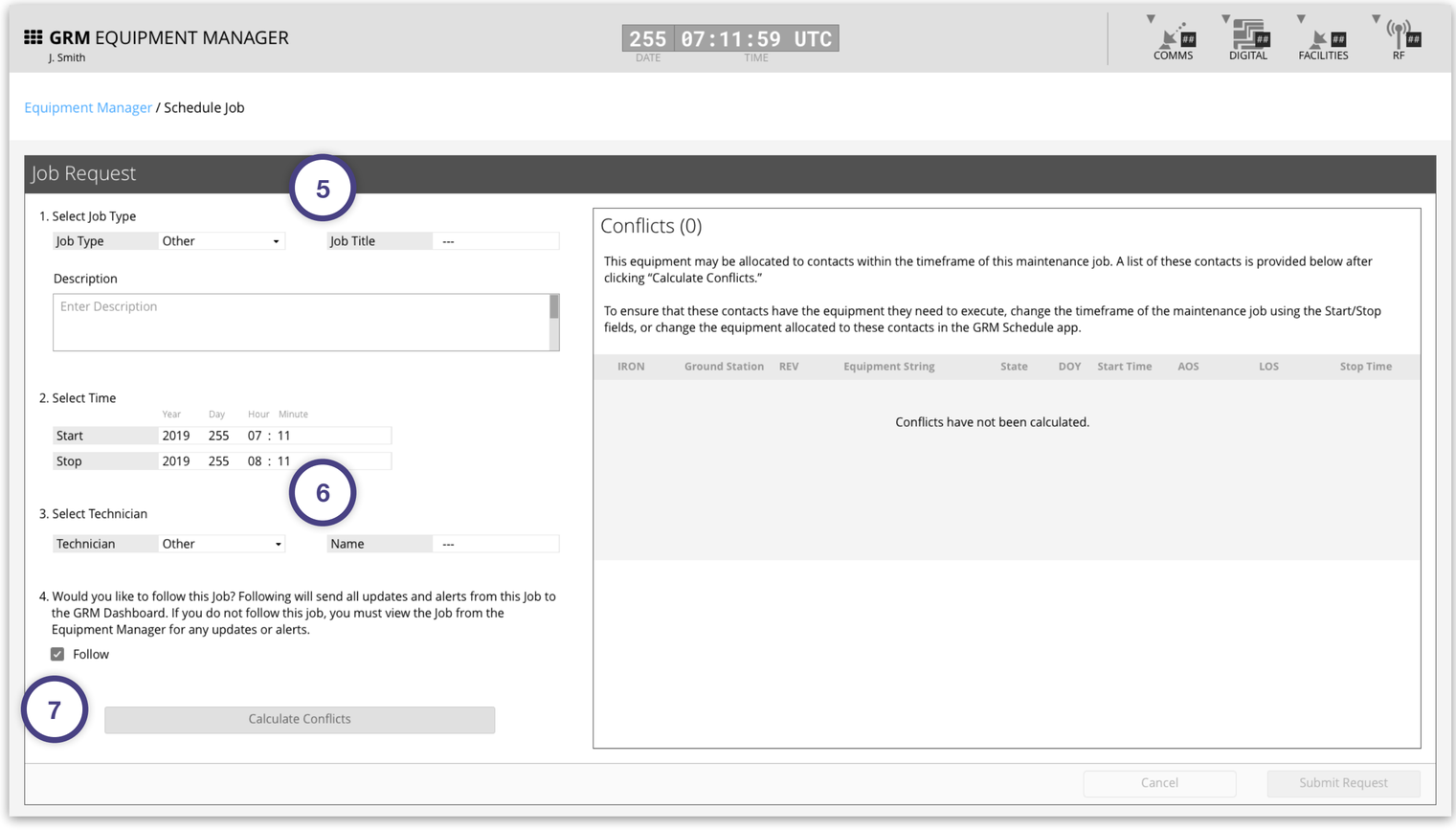
Equipment Manager - Schedule Maintenance Job Flow

Step

Complete the form fields (continued).

Features & Interactions

5. If the desired Job Type is not listed, the operator can choose “Other” from the list. A field appears to the right where the operator can enter a custom Job Title.
6. If the desired Technician is not listed, the operator can choose “Other” from the list. A field appears to the right where the operator can enter a custom Technician name.
7. The “Submit Request” button will be disabled until the operator clicks “Calculate Conflicts.” This generates a list of contacts that will not execute due to the time window of this job, unless they are allocated different equipment.



GRM Wireframes.pdf, page 77

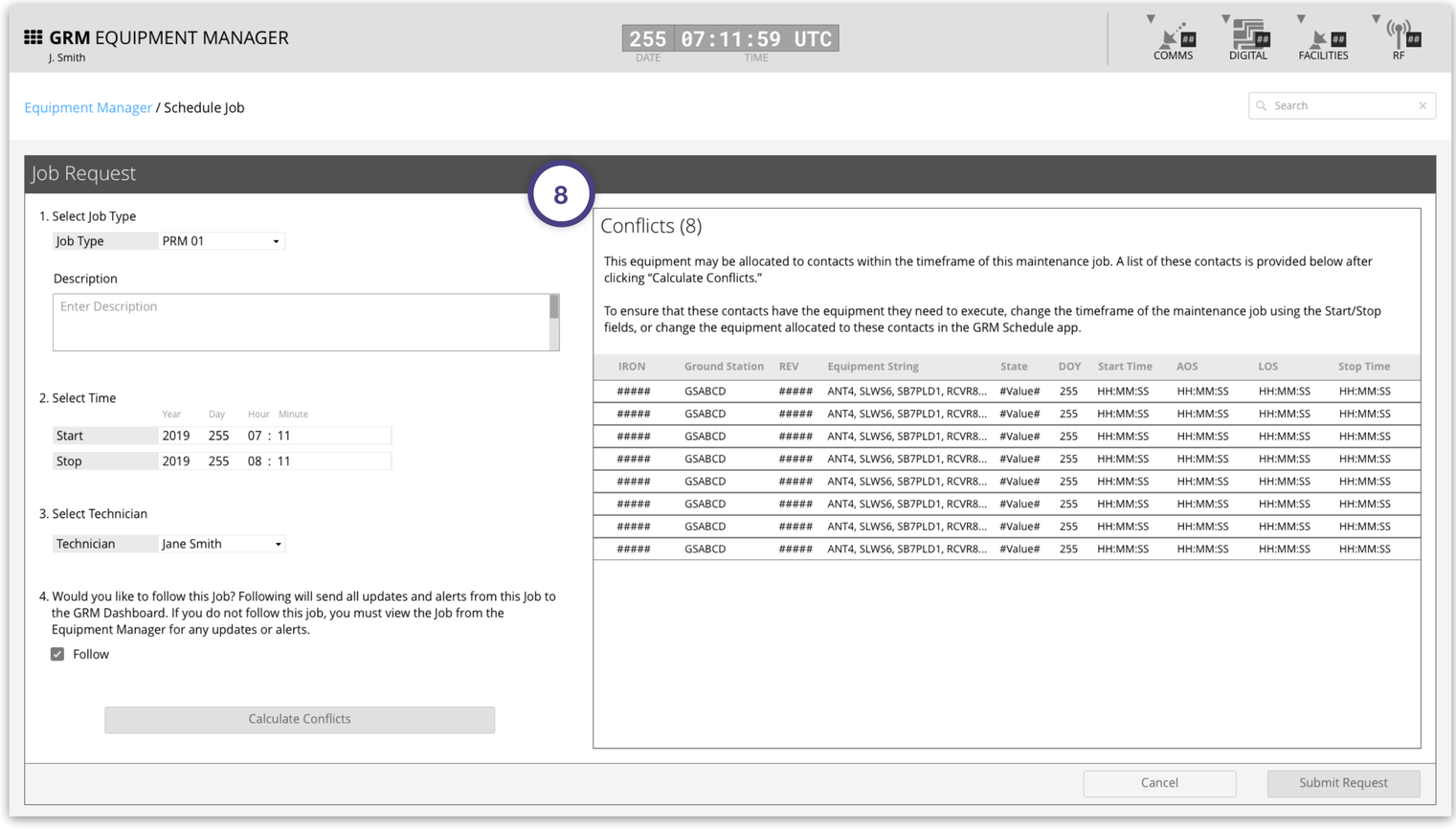
Equipment Manager - Schedule Maintenance Job Flow

Step

View the list of contacts that will not execute due to the time window of this maintenance job.

Features & Interactions

8. A list of contacts affected by this job appears here. To resolve conflicts, the operator can either change the fields under “Select Time”, then regenerate this list by clicking “Calculate Conflicts” again, or by changing the equipment allocated to these contacts in the GRM Schedule application.

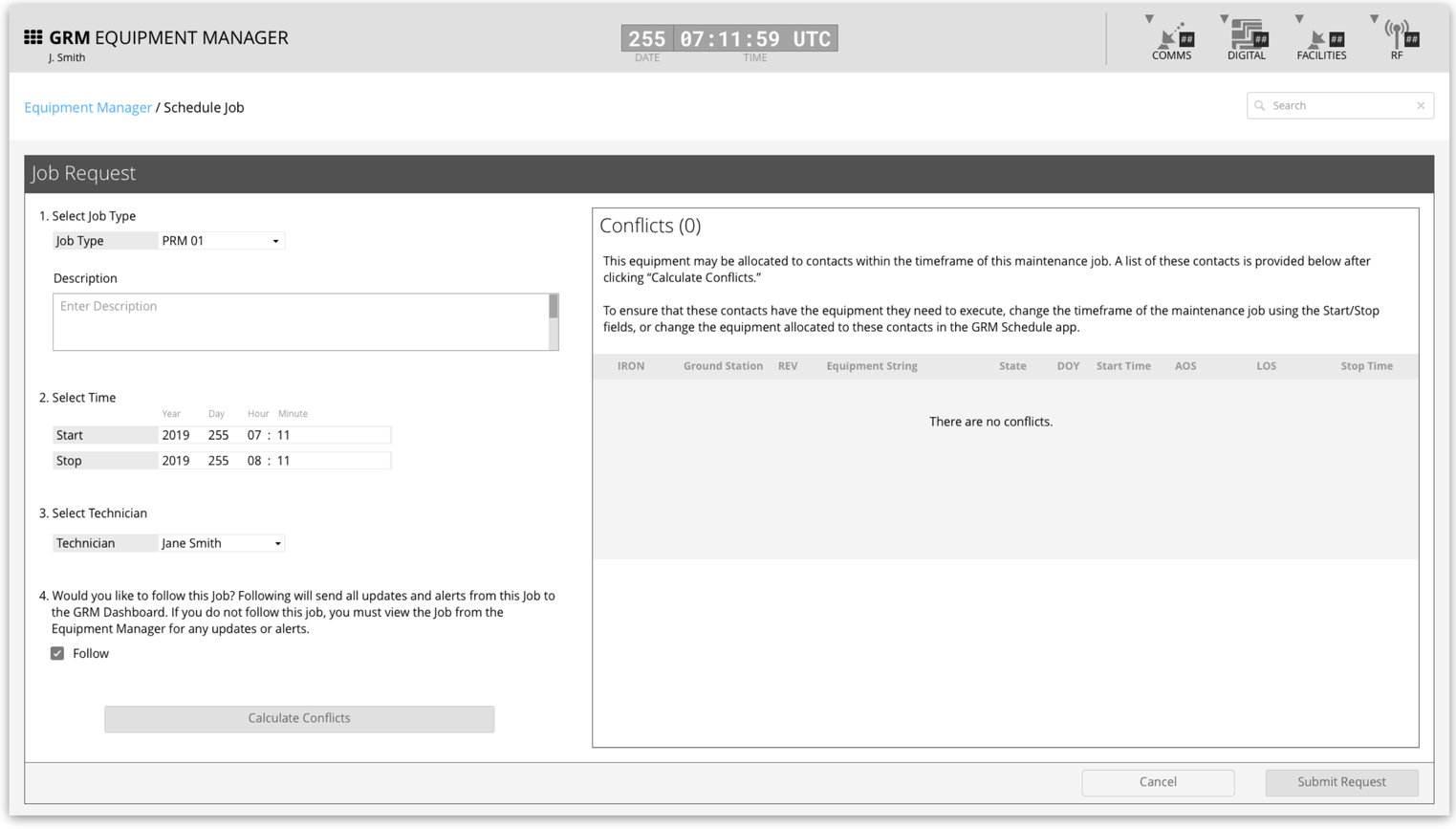


GRM Wireframes.pdf, page 78

Equipment Manager - Schedule Maintenance Job Flow

Step

Click “Submit Request” to complete scheduling the maintenance job.



GRM Wireframes.pdf, page 79

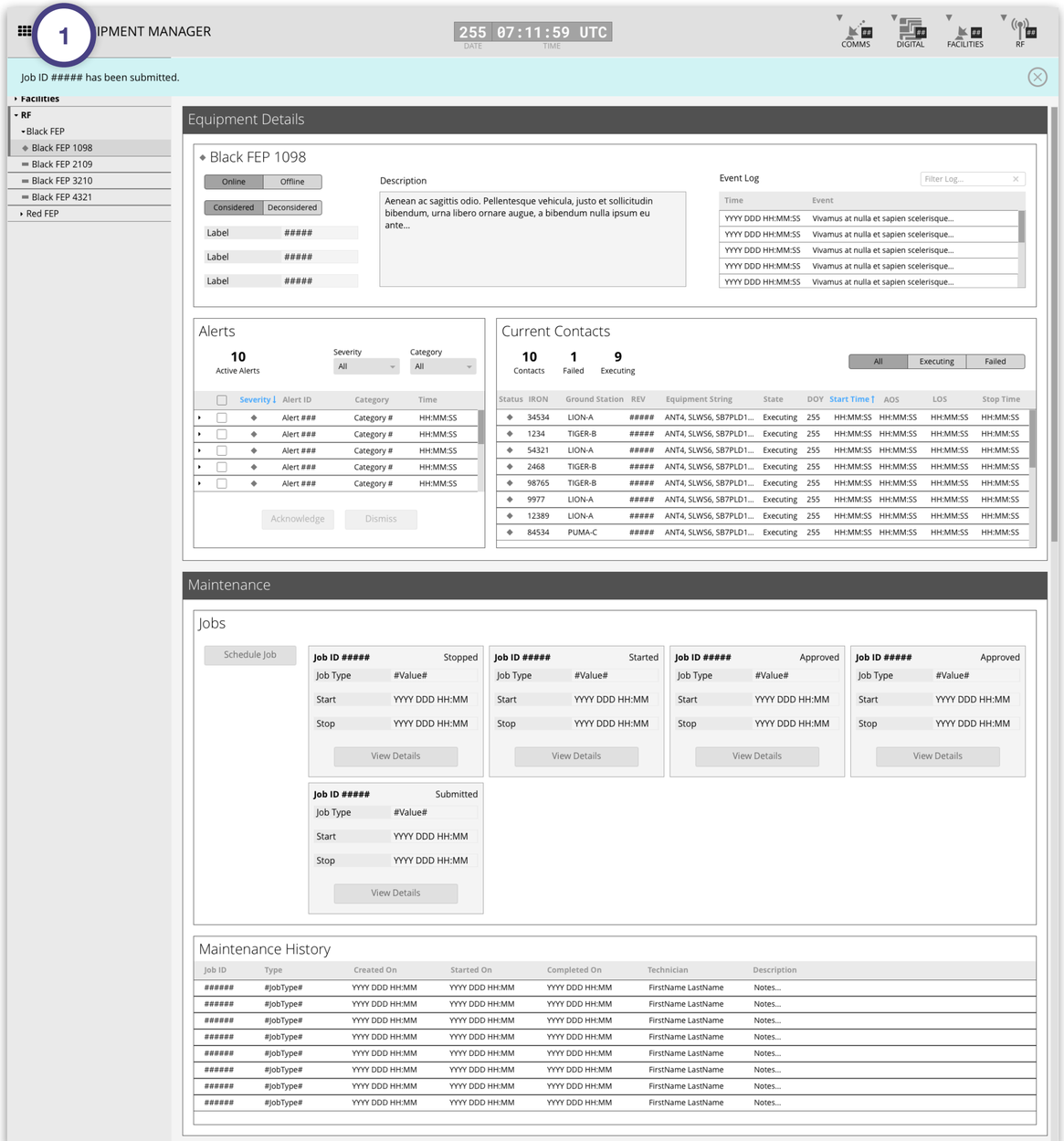
Equipment Manager - Schedule Maintenance Job Flow

Step

The operator is returned to the Equipment Details page and a Notification Banner displays showing that the job has been submitted.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar. The operator can dismiss the banner by clicking the “X” button on the right.

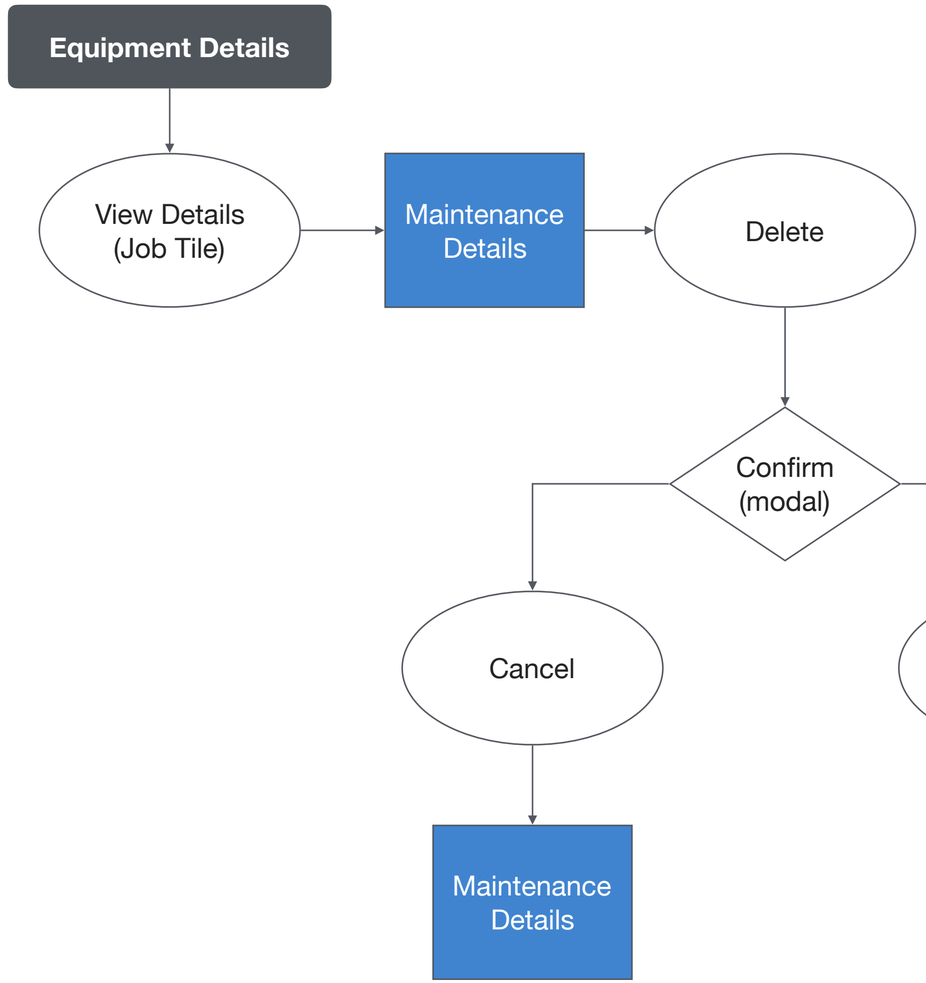


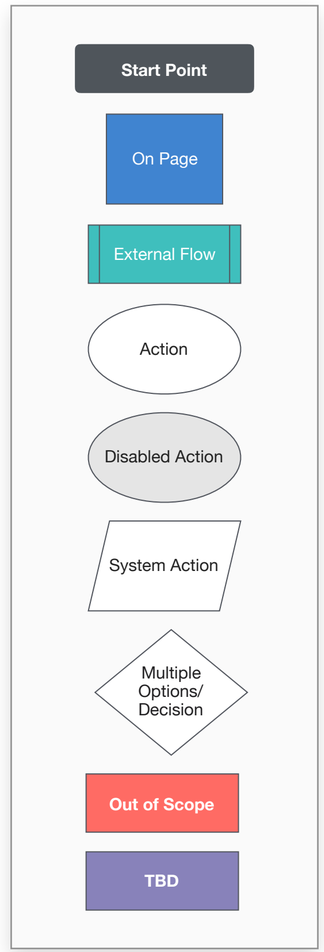
GRM Wireframes.pdf, page 80

Equipment Manager - Delete Maintenance Job Flow

This user flow shows the content and actions involved in deleting a maintenance job.

The following pages in this document (96-99) provide a full description of each step alongside the correlating screen of the application.

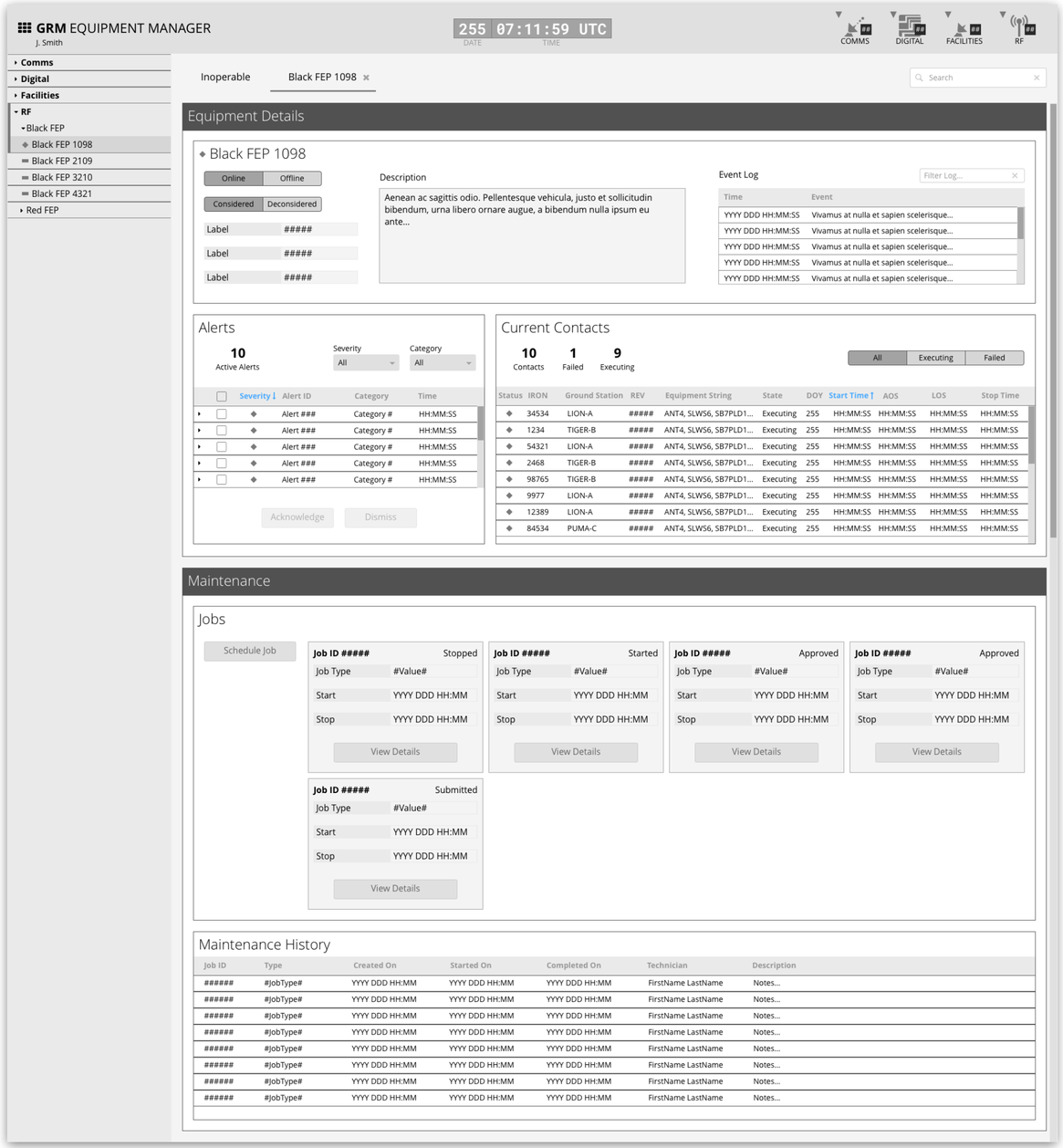




Equipment Manager - Delete Maintenance Job Flow

Step

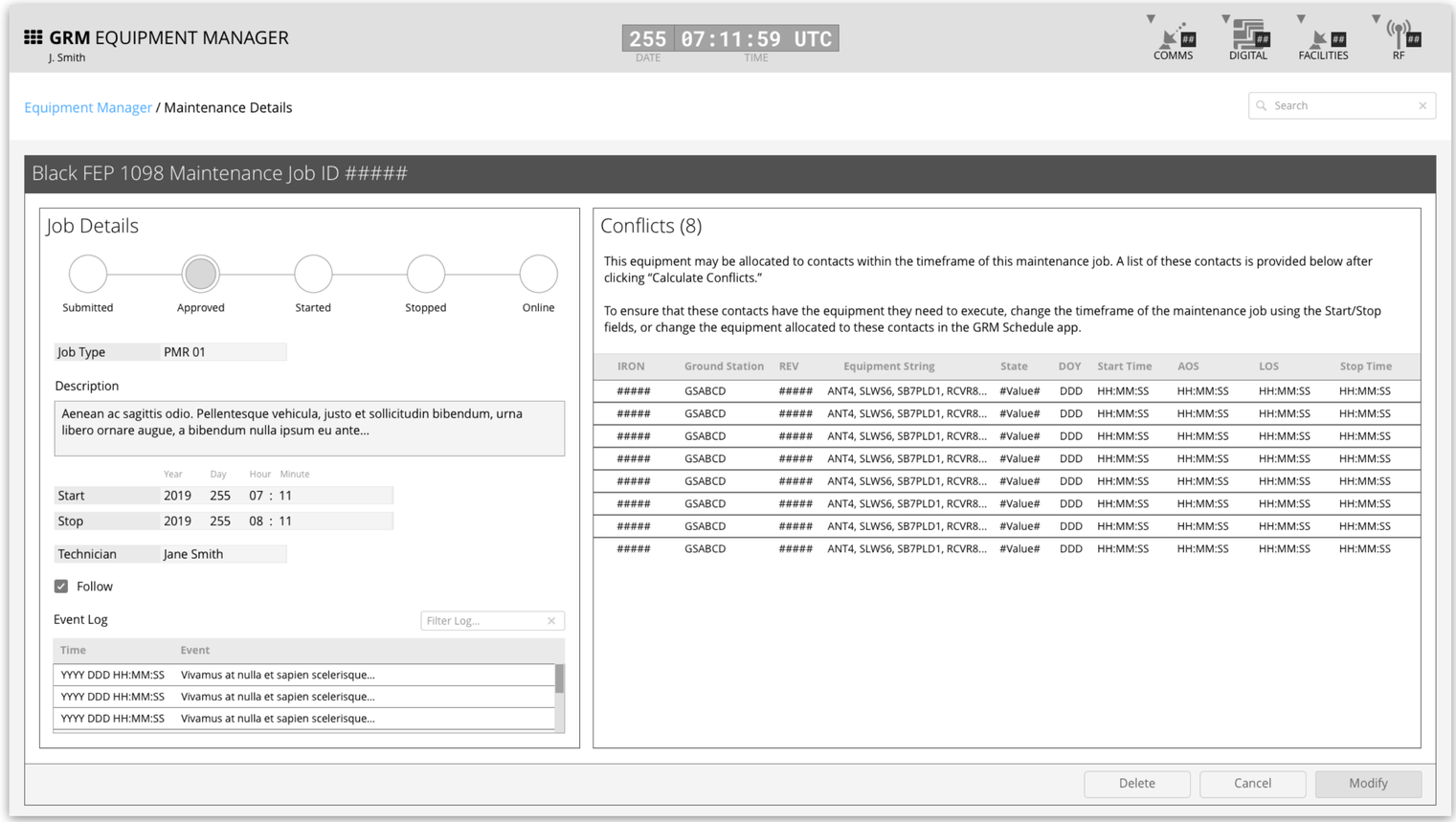
In the Maintenance section of the Equipment Details page, locate the job in the set of tiles. Each tile represents a current/incomplete maintenance job for this equipment. Click the “View Details” button inside the desired tile.



Equipment Manager - Delete Maintenance Job Flow

Step

Click “Delete.”

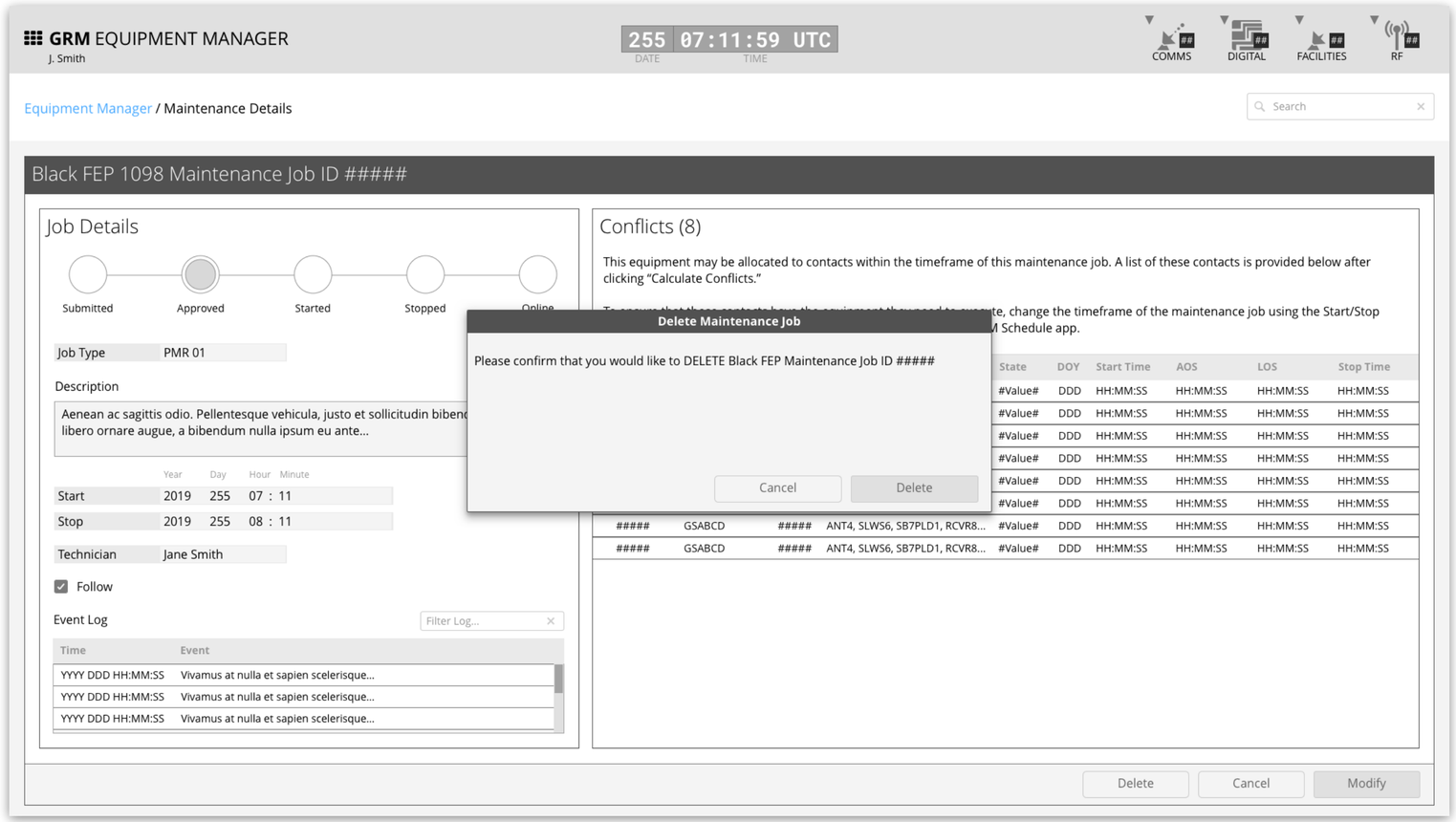


GRM Wireframes.pdf, page 73

Equipment Manager - Delete Maintenance Job Flow

Step

Click “Delete” inside the modal dialog to confirm the action.



GRM Wireframes.pdf, page 74

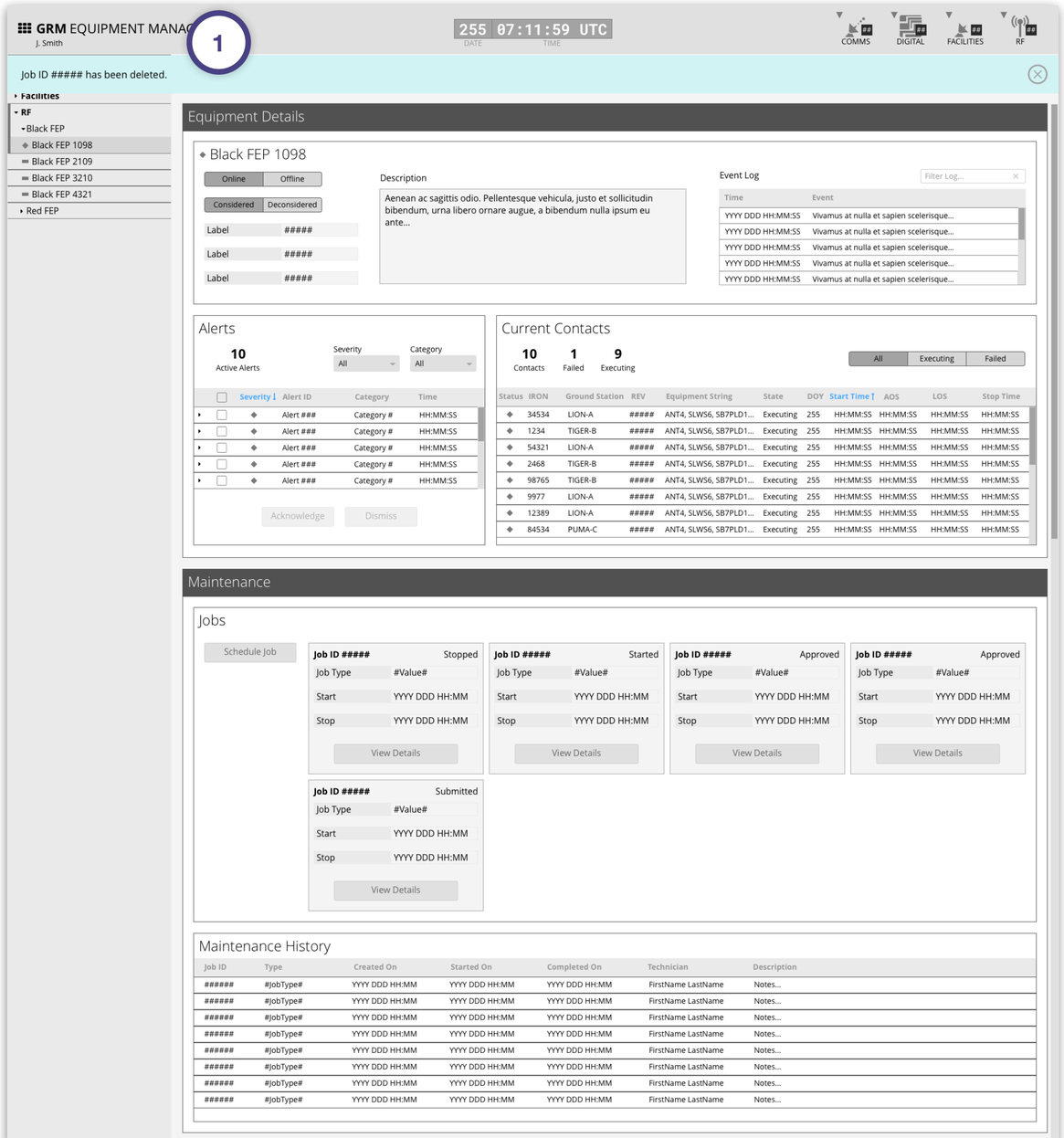
Equipment Manager - Delete Maintenance Job Flow

Step

The operator is returned to the Equipment Details page and a Notification Banner displays confirmation of the action.

Features & Interactions

1. The Notification Banner displays directly below the Global Status Bar. The operator can dismiss the banner by clicking the “X” button on the right.

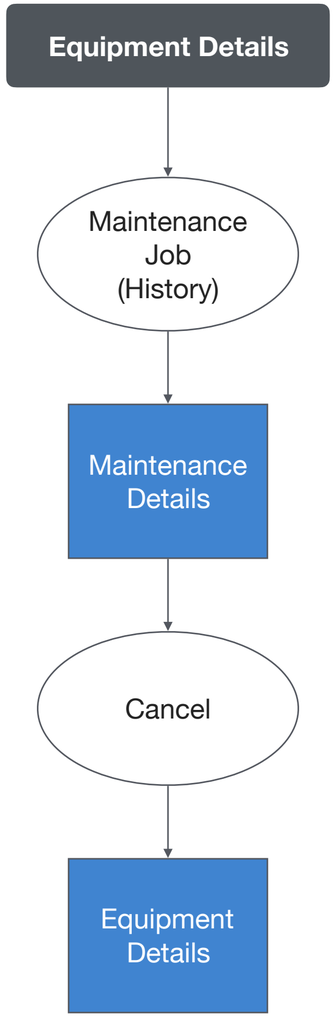


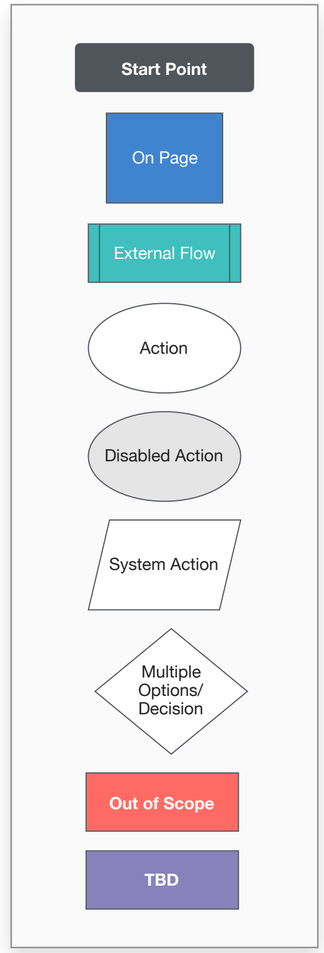
GRM Wireframes.pdf, page 75

Equipment Manager - Maintenance History Flow

This user flow shows the content and actions involved in viewing a completed job from the Maintenance History table.

The following pages in this document (101-103) provide a full description of each step alongside the correlating screen of the application.

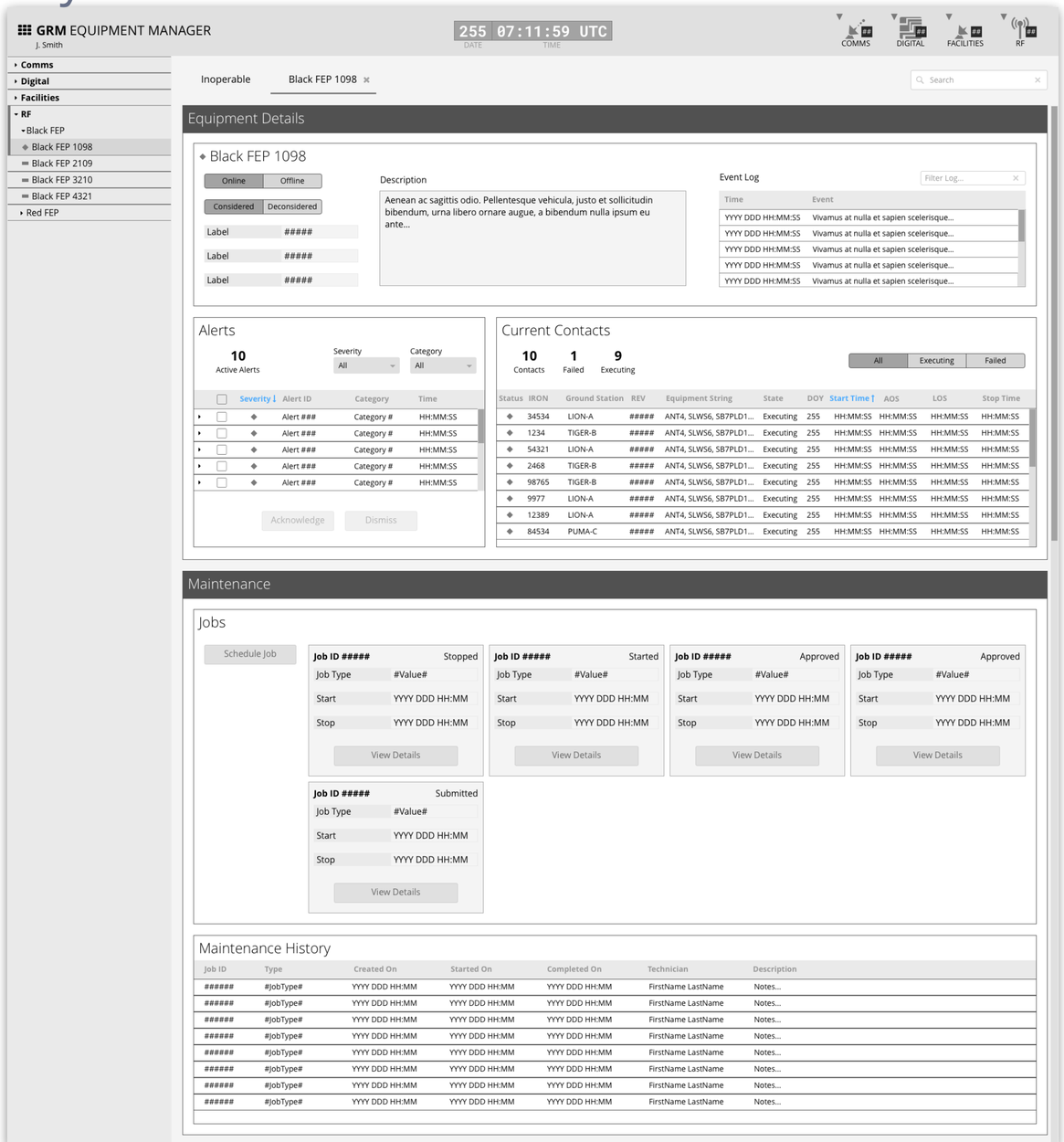




Equipment Manager - Maintenance History Flow

Step

In the Maintenance section of the Equipment Details page, locate the desired job in the table under “Maintenance History.”

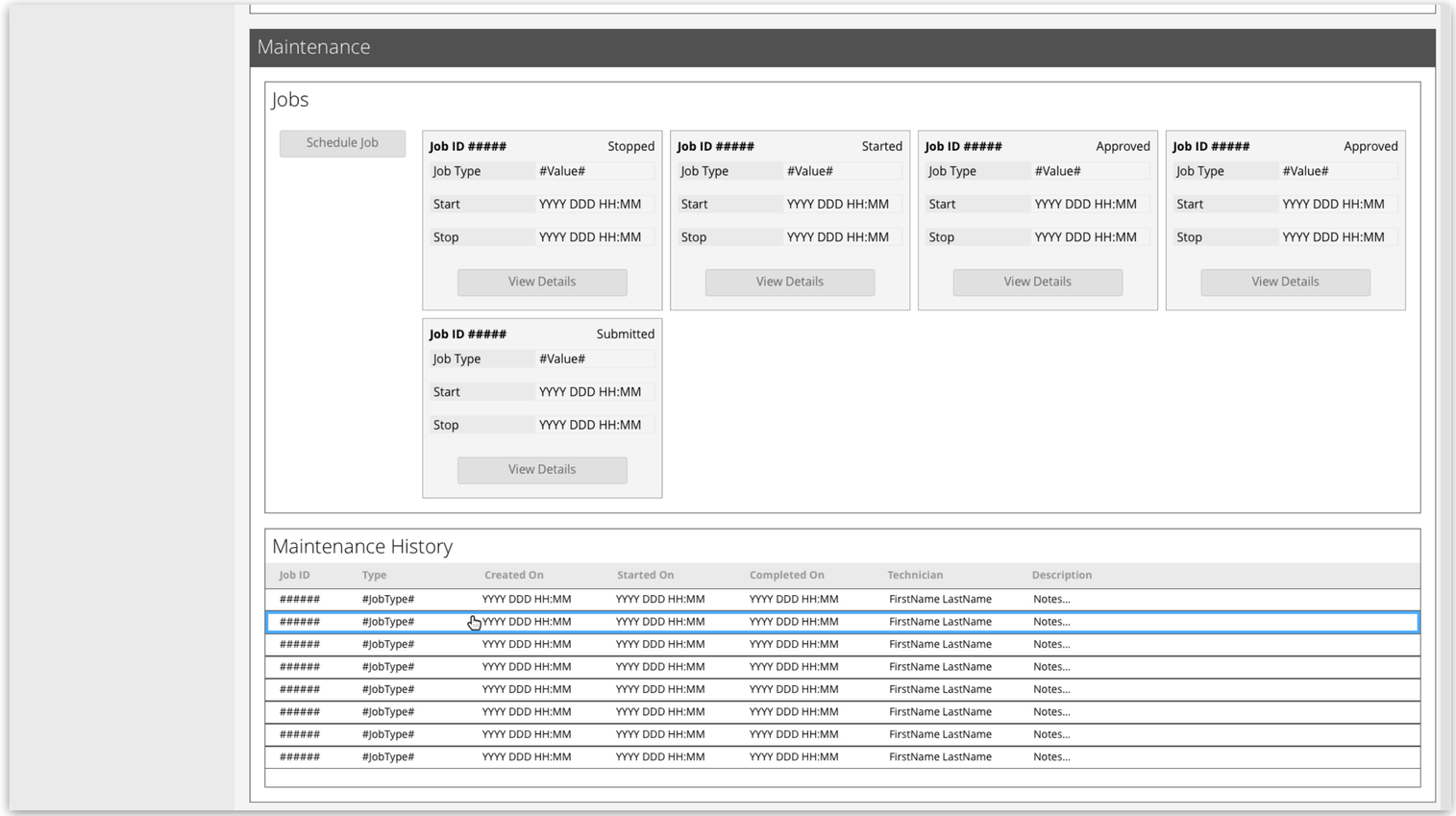


GRM Wireframes.pdf, page 72

Equipment Manager - Maintenance History Flow

Step

Click on the row of the desired job.



GRM Wireframes.pdf, page 81

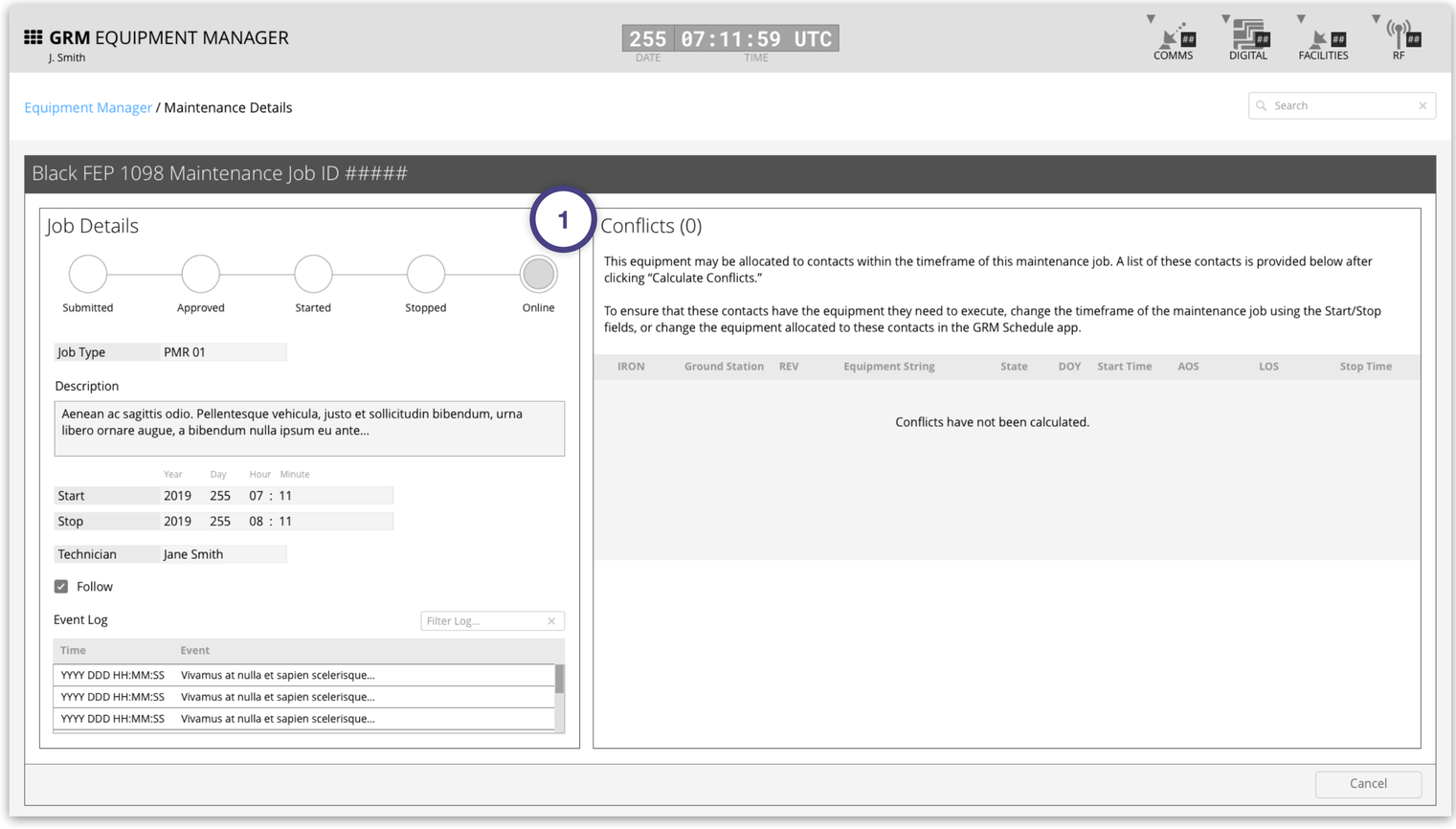
Equipment Manager - Maintenance History Flow

Step

View the Maintenance Details page for the completed job.

Features & Interactions

1. The Progress Tracker indicates that the job is complete and that the equipment was placed back in the resource pool. The number and taxonomy of these steps should be configured by each squadron at set up time.



GRM Wireframes.pdf, page 82