Feature Set (DRAFT VERSION)

Project Information

Project: Agro-Climatic Advisory Portal - Bicol (ACAP-BICOL), ACAP 1.0

Release Number: 4.0
Date updated: August 24, 2023

Attached worksheets:

- ACAP 1.0 Use Case Suite 4.0 (ACAP_1.0_Use_Case_Suite_4.0.pdf)

Description: This document discusses the detailed implementation, workflows, processes, and related notes of the ACAP 1.0 main features.

Use case details (UC) are available in the ACAP_1.0_Use_Case_Suite_4.0.pdf file.

Features by Functional Area

- **Public web page viewing**
  - UC-00: View Home page
  - UC-01: View Cropping Calendar
  - UC-02: View ACAP Services page
  - UC-03: View ACAP Services - 10-Day Weather Forecast Municipality Selector
  - UC-04: View ACAP Services - Seasonal Weather Forecast
  - UC-05: View ACAP Services - Special Weather Forecast
  - UC-06: View Bulletins page
  - UC-07: View Recommendations page
  - UC-08: View Admin login page
  - UC-09: View Super admin login page
  - UC-10: Site Search
- **Public Recommendations Generator**
  - UC-11: Generate public seasonal recommendations
  - UC-12: Generate public 10-day outlook recommendations
  - UC-13: View the Tagalog or English translation of generated public recommendations
- **Public Bulletins PDF Download**
  - UC-14: View 10-day outlook bulletins download page
  - UC-15: View seasonal outlook bulletins download page
  - UC-16: View special weather forecast bulletins download page
  - UC-17: Download bulletin PDF
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- **Login and Authentication**
  - UC-19: Login (Administrator)
  - UC-20: Login (Super Administrator)
- **Seasonal weather forecast management**
  - UC-21: Upload PAGASA seasonal outlook Excel file
  - UC-22: Encode seasonal forecast tropical cyclone
  - UC-23: Create new seasonal forecast weather system
  - UC-24: Delete a seasonal forecast weather system
  - UC-25: Undo unsaved updates to seasonal forecast weather system
- **10-day weather forecast management**
  - UC-19: Login (Administrator)

  - UC-26: Upload 10-day forecast PAGASA Excel files
  - UC-27: Edit 10-day forecast moon phases

- **Tropical cyclone forecast management**
  - UC-19: Login (Administrator)
  - UC-28: Manual sync PAGASA special weather forecast
  - UC-29: Add new wind speed, province and municipalities list group
  - UC-30: Edit a windspeed, province and municipalities list group
  - UC-31: Delete a windspeed, province and municipalities list group

- **Crop Recommendations (Seasonal, 10-day and Special Weather) Bulletins and Reports Management**
  - UC-19: Login (Administrator)
  - UC-32: Generate seasonal crop recommendations website preview
  - UC-33: Generate 10-day crop recommendations website preview
  - UC-34: Generate special weather crop recommendations website preview
  - UC-35: View the Tagalog or English translation of generated recommendations
  - UC-36: Preview PDF bulletin of generated crop recommendations (for 10-day, seasonal and special outlook forecasts)
  - UC-37: Create crop recommendations report
  - UC-38: Create 10-day crop recommendations report
  - UC-39: Create special weather crop recommendations report
  - UC-40: View crop recommendations reports list
  - UC-41: View the PDF form of a crop recommendation report
  - UC-42: View the SMS form of a crop recommendation report
  - UC-43: Delete a crop recommendation report

- **Phonebook contacts list management**
  - UC-19: Login (Administrator)
  - UC-44: Add contact
  - UC-45: View contact details
  - UC-46: Edit contact details
  - UC-47: Delete contact
  - UC-48: Search for contact

- **SMS management**
  - UC-19: Login (Administrator)
  - UC-49: View list of SMS recommendations
  - UC-50: View logs of an SMS recommendation
  - UC-51: Send an SMS recommendation to a Contact
  - UC-52: Send an SMS recommendation to multiple Contacts

- **User Profile Management**
  - UC-19: Login (Administrator)
  - UC-20: Login (Super Administrator)
  - UC-53: View profile information
  - UC-54: Update account password

- **Accounts Management**
  - UC-55: View users list
  - UC-56: Create a new useristrator

  - UC-57: View user details
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- **Configure Database**
  - UC-60: Set Firebase Rules
  - UC-61: Seed database with default data
  - UC-62: Upload crop recommendations Excel file data to database
  - UC-63: Upload cropping calendar CSV file data to database

- **PAGASA Weather Forecast Management**
  - UC-64: Cron job - auto sync PAGASA 10-day Excel weather forecast files to database
  - UC-65: Cron job auto - sync PAGASA El Nino / La Nina text content to database
  - UC-66: Cron job - auto sync PAGASA Tropcical Cyclone text content to database

F-00: Home page

Priority: Desired
Risk: Safe
Functional Areas: Public web page viewing
Use case(s): UC-00

Description

The Home page, which serves as the website's landing page, can be found at the root domain URL at https://amia-cis.github.io. It features a full-page web map focusing on the Bicol region while displaying markers on the AMIA Villages of Region 5 (Bicol).

List of Technologies and Components

- Web map (LeafletJS)
- Shapefiles
- GeoJSON

Features

- Full page web map
- AMIA Villages location selector
- 10-day Weather Forecast Overview of a selected Municipality

Workflow

1. A user visits the Home page.
2. Fetch data:
    a. AMIA Villages data
    b. 10-day weather forecast of the first AMIA village
    c. Bicol region GeoJSON
3. After fetching data:
4. Display the "Welcome to the Agro-Climatic Advisory Portal-Bicol (ACAP-BICOL)!" welcome message only for first-time website loading.
    a. Overlay the GeoJSON layer on the base map.
    b. Zoom the map to the lat, lon coordinates of the first AMIA village
    c. Display the 10-day weather forecast of the 1st AMIA village.
    d. Display the details of the 1st AMIA village in a LeafletJS pop-over over its point marker.
5. Press the [+ / -] buttons in the web map's upper left corner to toggle the web map's zoom level.
6. Press the layer icon button in the web map's upper left corner below the [+ / -] buttons to display a list of available base maps.
7. Click the checkbox beside a base map label name to change the web map's underlying base map.

Notes

- The shapefile and AMIA villages data may not be readily available during the project start.
- ACAP uses a web-friendly GeoJSON file format version of the shapefile.
- The shapefile and AMIA villages data should follow the format of what's currently used by ACAP.
- The GeoJSON file is hosted on an external CDN (such as the project's Firebase storage or MapBox) and fetched on the web map.

F-01: Cropping Calendar page

Priority: Esential
Risk: Risk
Functional Areas: Public web page viewing
Prerequisites: UC-60, UC-63, UC-64
Use case(s): UC-01, UC-36, UC-37, UC-38, UC-39

Description

The Cropping Calendar page displays an interactive calendar showing months from January to December for the Rice crop in a region's provinces and municipalities.

Crop stages are visible for the 1st and 2nd halves of a month.

Available crop stages include the Preparation Stage, Newly Planted, Vegetative/Reproductive, and Maturing stages.

List of Technologies and Components

- Firestore database
- React
- Cropping calendar
- Cropping calendar CSV file

Features

- Interactive cropping calendar
- Location (province, municipality) selector

Workflow

1. A Super Administrator uploads the cropping calendar CSV file to the database during system initialization, or anytime during the project duration.
2. A user visits the Cropping Calendar page.
3. Fetch data:
    a. Municipalities list of the default province
    b. Cropping calendar of the default province and municipality
4. Display the default province and municipality names in the Location selector.
5. Display the cropping calendar data visualization of the default province and municipality names.
6. Selecting a province name from the location selector will:
7. Fetch the cropping calendar data of the selected province.
    a. Auto-select the 1st municipality under the selected province item in the municipality option of the Location selector.
    b. Display the cropping calendar data visualization of the selected province option and its 1st municipality.
8. Selecting a municipality item in the location selector will display its cropping calendar data visualization.

Notes

- A system administrator or the web developer assigned to configuring the ACAP system and website should first upload the cropping calendar data to the Firestore database.
    - Read the /server/README.md file's Available Scripts section for more information on how to do this
    - The data source of this feature is dependent on **UC-63.**
- The final cropping calendar data may not yet be readily available during the project start.
- The cropping calendar currently supports displaying only (1) one crop (Rice)

Cropping Calendar – Crop Stages and Farm Operations (Activities) Reference

We use the following cropping calendar terminologies and labels for the crop stages and farm operations.

1. **Preparation Stage** *(lprep)*
    a. Seed Selection
    b. Land Preparation
2. **Newly Planted** *(plant/trans)*
    a. Planting/Transplanting
3. **Vegetative/Reproductive** *(veg/repro)*
    a. Water Management
    b. Fertlizer Application
    c. Pest and Weed Management
4. **Maturing** *(mat)*
    a. Harvesting
    b. Post-harvest

F-02: ACAP Services – 10-Day Weather Forecast

Priority: Essential
Risk: Risk
Functional Areas: Public web page viewing
Prerequisites: UC-60, UC-64
Use case(s): UC-02, UC-03, UC-26, UC-27

Description

The ***10-Day Weather Forecast*** is one of the PAGASA-based weather forecast sections available under the ACAP Services web page at https://amia-cis.github.io/weather-services.

It displays a simplified overview of the 10-day weather forecast (Rainfall Intensity, Cloud Cover, Average Temperature, and Wind Speed) of a selected municipality for RFOs and other public viewers to use as a reference.

This page displays PAGASA's 10-day weather forecast Excel files (day1.xlsx – day10.xlsx) fetched from their 10-Day Climate Forecast web page [link]. These files are downloaded, parsed, and stored in ACAP's Firestore database once daily between 9:00 AM – 12:00 PM Philippine time if there are no errors.

List of Technologies and Components

- Firestore database
- React
- PAGASA 10-Day Weather Forecast Excel Files (day1.xlsx – day10.xlsx)

Rainfall (%)	PAGASA 10-Day	PAGASA 10-Day Rainfall Amount Descriptive Text
<= 40%	NO RAIN	No rain is expected within the day
41% - 80%	LIGHT RAINS	Less than 60mm of rain within 24 hours
81% - 120%	MODERATE RAINS	60mm - 180mm of rain within 24 hours
value > 120%	HEAVY RAINS	greater than 180mm of rain within 24 hours

Features

- Location (province, municipality) selector
- Data overview summary
- 10-day weather forecast overview of a selected municipality

Workflow

1. A user visits the ACAP Services web page.
2. Fetch data:
    a. Municipalities list of the default province
    b. 10-day weather forecast of the default province
3. Display the 10-day weather forecast of the default province and municipality.
4. Selecting a province name from the location selector will:
5. Fetch the 10-day weather forecast of the province option.
    a. Auto-select the 1st municipality under the selected province in the municipality option of the Location selector
    b. Display the 10-day weather forecast of the default province and its 1st municipality.
6. Selecting a municipality item in the location selector will:
    a. Display the 10-day weather forecast data of the municipality option.

Notes

- A system administrator or the web developer in charge of setting the ACAP system and website should first upload the 10-day weather forecast data to the Firestore database.
    - Read the /server/README.md file's Available Scripts section for more information on how to do this
- The data source of this feature depends on **UC-64,** **UC-26**, and **UC-27** under the *10-day weather forecast management* component.

F-03: ACAP Services – Seasonal Weather Forecast

Priority: Essential
Risk: Risk
Functional Areas: Public web page viewing
Prerequisites: UC-60, UC-65, UC-21
Use case(s): UC-02, UC-04, UC-22, UC-23, UC-24

Description

The ***Seasonal Weather Forecast*** is one of the PAGASA-based weather forecast sections available under the ACAP Services web page at: https://amia-cis.github.io/ weather-services/.

It displays a simplified overview of the seasonal weather forecast organized in a well-structured table layout for RFOs and other public viewers to use as a reference.

ACAP sources its seasonal weather forecast data from the seasonal weather forecast data shared by PAGASA in Excel files through email, which gets uploaded to the Firestore database (UC-21). It also displays several manual-encoded parameters (UC-22, UC-23) and the El Nino / La Nina data from UC-65.

List of Technologies and Components

- Firestore database
- React
- PAGASA Seasonal Weather Outlook Excel file

Rainfall (%)	PAGASA Seasonal
<= 40%	Way below normal
41% - 80%	Below normal
81% - 120%	Normal
value > 120%	Above normal

Features

- El Nino / La Nina Monitoring sub section
- Weather Systems that May Affect the Region sub section
- No. of Tropical Cyclones and No. of Dry Days table
- Analysis of Rainfall table

Workflow

1. A user visits the ACAP Services web page.
2. Fetch the seasonal weather forecast data.
3. Display the seasonal weather forecast data for each of the listed Features.

Notes

- The data source of this feature is dependent on **UC-21**, **UC-22**, **UC-23**, **UC-24**, and **UC-65** under the *Seasonal weather forecast management* component.

F-04: ACAP Services – Special Weather Forecast

Priority: Essential
Risk: Risk
Functional Areas: Public web page viewing
Prerequisites: UC-60, UC-66
Use case(s): UC-02, UC-05, UC-28, UC-29, UC-30, UC-31

Description

The ***Special Weather Forecast*** is one of the PAGASA-based weather forecast sections available under the ACAP Services web page at: https://amia-cis.github.io/weather-services/.

It displays tropical cyclone information sourced from PAGASA's Tropical Cyclone Bulletin web page [link], synced every 2 hours.

The web page may or may not display Tropical Cyclone data depending on the presence of a typhoon in the Philippine Area of Responsibility (PAR) as observed by PAGASA.

List of Technologies and Components

- Firestore database
- React

Features

- Special Weather Forecast summary (text content)

Workflow

1. A user visits the ACAP Services web page.
2. Fetch the special weather forecast (tropical cylone) data from the database.
3. Display the special weather forecast text content.

Notes

- The data source of this feature is dependent on **UC-28**, **UC-29**, **UC-30**, **UC-31**, and **UC-66** under the *Tropical cyclone forecast management* component.

F-05: Download Bulletin PDF

Priority: Essential
Risk: Risk
Functional Areas:

- Public web page viewing
- Public Bulletins PDF Download

Prerequisites: UC-60, UC-61
Use case(s): UC-06, UC-14, UC-15, UC-16, UC-17, UC-18

Description

This feature allows users to view the public bulletin web pages (UC-06) and download bulletin PDFs from their respective subpages: 10-day weather outlook (UC-14), seasonal outlook (UC-15), and tropical cyclone/special weather (UC-16) bulletin pages.

List of Technologies and Components

- Firestore database
- Firebase Cloud Storage
- React
- Bulletin PDFs

Features

- Parent (root) container bulletins web page
- 10-Day Farm Weather Outlook bulletin sub page
- Seasonal Outlook bulletin sub page
- Special Weather Forecast bulletin sub page
- Bulletin PDF download links in each sub page, organized by province
- Bulletin PDF deletion

Workflow

Download a bulletin PDF

1. A user visits the Bulletins web page.
2. Press the VIEW button of a bulletin sub-page (10-day, seasonal, or special weather)
3. View the accordion-like expanding province list.
4. Click a province in the accordion-like list to expand bulletin list created under it.
5. Click the download link of a bulletin PDF under one of the provinces.
6. Wait for the download process to finish.

Delete a bulletin PDF

1. View a bulletin PDF for downloading described in the “Download a bulletin PDF” steps.
2. If an Administrator user is signed in, press the **TRASH CAN icon** beside the download link URL to delete the bulletin PDF.

F-06: Public Seasonal Recommendations

Priority: Essential

Risk: Risk

Functional Areas:

- Public web page viewing
- Public Recommendations Generator

Prerequisites: UC-60, UC-61

Use case(s): UC-07, UC-11, UC-13, UC-21, UC-62, UC-63

Description

The public recommendations allow linking of the ***Seasonal Crop Recommendations*** with the cropping calendar and PAGASA rainfall forecast.

Users can generate recommendations for on-site viewing without signing in as an Administrator.

The resulting Seasonal crop recommendations link with a selected month's seasonal *rainfall forecast*, (1) one *crop stage* from a set of crop stage(s) included in the 1st and 2nd halves of a selected month's cropping calendar, and (1) activity.

List of Technologies and Components

- Firestore database
- React
- Cropping calendar
- PAGASA Seasonal weather forecast
- PAGASA Rainfall forecast labels:

Seasonal Rainfall (%)	PAGASA Seasonal Labels	PAGASA 10-Day Labels	PAGASA 10-Day Rainfall Amount Descriptive Text
<= 40%	Way below normal	NO RAIN	No rain is expected within the day
41% - 80%	Below normal	LIGHT RAINS	Less than 60mm of rain within 24 hours
81% - 120%	Normal	MODERATE RAINS	60mm - 180mm of rain within 24 hours
value > 120%	Above normal	HEAVY RAINS	Greater than 180mm of rain within 24 hours

Features

- Interactive, visual public Seasonal Recommendations Generator

Workflow

1. Select a province.
2. Fetch data for the selected province option:
    a. Cropping calendar data
    b. Municipalities names list
    c. Seasonal weather forecast data
3. Select a municipality
4. Select a crop type.
5. Select a **month**
6. Display the seasonal weather forecast summary under the selector panel. Take note of the selected month's ***rainfall forecast.*** (i.e., the normal, below normal, above normal, or way below normal forecasts)
    a. Find the cropping calendar *"stages"* (1 or more) based on the 1st and 2nd halves of the selected month.
    b. Display the resulting "*crop stage(s)*" in a selectable dropdown menu.
7. Select a crop stage from **step #5.**
8. Fetch crop recommendations data by the selected ***"crop stage"*** and the resulting month's seasonal ***"rainfall forecast."***
    a. Display a list of unique *"activities"* from the fetched crop recommendations.
9. Select an activity from the resulting activities list in **step #6**.
10. Press the CLEAR button to reset the selection.
11. Press the FINISH button to view the crop recommendations based on the selected *"crop stage," "activity,"* and month's *"rainfall forecast"* parameters.
12. Press the TAGALOG/ENGLISH button in the upper right side of the resulting crop recommendations to toggle viewing the Tagalog or English translation.

Notes

- The data source of this feature is dependent on **UC-21**, **UC-62,** and **UC-63.**

F-07: Public 10-Day Weather Outlook Recommendations

Priority: Essential

Risk: Risk

Functional Areas:

- Public web page viewing
- Public Recommendations Generator

Prerequisites: UC-60, UC-61

Use case(s): UC-07, UC-12, UC-13, UC-26, UC-63, UC-64

Description

The public recommendations allow linking of the ***10-Day Farm Weather Outlook Recommendations*** with the cropping calendar and PAGASA 10-Day weather forecast.

Users can generate recommendations for on-site viewing without signing in as an Administrator.

Since this is a forecast, users can generate a recommendation for only *(1) one day* from the current date up to the last date of the current 10-day weather forecast validity period. Past dates are disabled for selection.

On the other hand, ***F-17: Generate 10-day crop recommendations website preview*** (***UC-33***) allows Administrators to create 10-day Farm Weather Outlook Operations for *all (10) ten days* included in the current 10-day weather forecast's validity date range.

The resulting 10-Day Farm Weather Outlook and Advisory recommendations link with at most (1) one *crop stage* from the 1st or 2nd month half the selected date falls into and (1) *activity*.

List of Technologies and Components

- Firestore database
- React

Seasonal Rainfall (%)	PAGASA Seasonal Labels	PAGASA 10-Day Labels	PAGASA 10-Day Rainfall Amount Descriptive Text
<= 40%	Way below normal	NO RAIN	No rain is expected within the day
41% - 80%	Below normal	LIGHT RAINS	Less than 60mm of rain within 24 hours
81% - 120%	Normal	MODERATE RAINS	60mm - 180mm of rain within 24 hours
value > 120%	Above normal	HEAVY RAINS	Greater than 180mm of rain within 24 hours

- Cropping calendar
- PAGASA 10-day weather forecast
- PAGASA Rainfall forecast labels

Features

- Interactive, visual public 10-Day Farm Weather Outlook and Advisory Recommendations Generator

Workflow

1. Select a province.
2. Fetch data for the selected province option:
    a. Cropping calendar data
    b. Municipalities names list
3. Select a municipality.
4. Select a **date** from the 10-day date range calendar selector. Disable dates past the current date.
5. Display the 10-day weather forecast summary of the selected date under the selector panel.
    a. Find the cropping calendar *"crop stage"* (1) associated with the 1st or 2nd month half in which the **date** falls.
    b. Display the *"crop stage"* (1) in a selectable dropdown menu.
    c. Select a crop stage from **step #4.** Fetch crop recommendation data by the selected ***"crop stage."***
    d. Display a list of unique *"activities"* from the fetched crop recommendations.
6. Select an activity from the resulting activities in **step #4**.
7. Press the CLEAR button to reset the selection.
8. Press the FINISH button to view the crop recommendations based on the

selected *"crop stage"* and *"activity"* parameters.

9. Press the TAGALOG/ENGLISH button in the upper right side of the resulting crop recommendations to toggle viewing the Tagalog or English translation.

Notes

- The data source of this feature is dependent on **UC-26, UC-63,** and **UC-64.**

F-08: Login and Authentication

Priority: Essential
Risk: Safe
Functional Areas:

- Public web page viewing
- Login and Authentication

Prerequisites: UC-60, UC-61
Use case(s): UC-08, UC-09, UC-19, UC-20

Description

This feature allows users to sign-in to the ACAP website as an Administrator or as a Super Administrator, which grants users elevated site access such as generating and uploading full bulletin PDFs, sending SMS text, and allowing manual updating of the weather forecast data.

Administrator accounts are created by Super Administrators, which in turn, was initially created by a System Administrator during the website and system set-up.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- NodeJS

Features

- Administrator Login page
- Super Administrator Login page

Workflow

Administrator Login

1. A user visits the Administrator login web page at https://amia-cis.github.io/admin/login/.
2. Enter the assigned email address (username) in the email text input.
3. Enter the password in the password text input.
4. Press the LOGIN button.
5. The Administrator will be redirected to the “Welcome page” for signed-in Administrators.

Super Administrator Login

1. A user visits the Super Administrator login web page at https://amia-cis.github.io/superadmin/login/.
2. Enter the assigned email address (username) in the email text input.
3. Enter the password in the password text input.
4. Press the LOGIN button.
5. The Super Administrator will be redirected to the “Welcome page” for signed-in Super Administrators.

F-09: Site Search

Priority: Essential
Risk: Safe
Functional Areas:

- Public web page viewing

Prerequisites: UC-60, UC-61
Use case(s): UC-10

Description

This feature allows users to search for keywords within the website. In-site web pages containing the matching search words will have URL links listed in a dropdown box.

Clicking the URL will navigate the user to the internal web page.

List of Technologies and Components

- Firestore database
- React

Features

- Search bar in the upper right public navigation menu
- Search results list

Workflow

1. A user visits the Home page, or other publicly-accessibe ACAP web page.
2. Press the MAGNIFIER ICON in the rightmost corner of the upper navigation menul.
3. Enter a keyword to search for in the SEARCH BAR.
4. View the resulting URL links to in-site web pages containing the keyword searched for.
5. Click any of the URL links from the list in step #4.

Notes

- This feature needs to run the server NPM script ***"npm run build:page_index"*** in case new words and text content were added to website.

F-10: Upload PAGASA Seasonal Outlook Excel file

Priority: Essential
Risk: Safe
Functional Areas:

- Seasonal weather forecast management

Use case(s): UC-21, UC-22, UC-36, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrator users to update ACAP's seasonal weather forecast data by uploading PAGASA's shared Seasonal Weather Forecast Excel file to the database.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- NodeJS
- Render
- PAGASA Seasonal Weather Outlook Excel file

Rainfall (%)	PAGASA Seasonal
<= 40%	Way below normal
41% - 80%	Below normal
81% - 120%	Normal
value > 120%	Above normal

Features

- PAGASA Seasonal Weather Forecast Excel File parser and validation
- ACAP 1.0 REST API endpoint at:
  POST /api/weather/seasonal/excel
- Web user interface for Excel file search and upload

Workflow

ACAP Seasonal Weather Forecast Data Update Process

1. An ACAP team member receives an updated set of seasonal weather forecast data (thru email) from PAGASA in an Excel file per month (irregular set time of intervals between each email).
2. The ACAP team member uploads the received seasonal weather forecast Excel file to the database using the detailed items of this feature.
3. ACAP stores the parsed seasonal weather forecast data in the database, overwriting old data if the Excel file passes a successful data validation.
4. Delete the uploaded Excel file in the server.

Update Instructions

1. Log in as an Administrator to the ACAP Admin pages.
2. Go to the ACAP Settings -> SEASONAL tab.
3. Scroll under the ***Seasonal Weather Forecast Updater*** section.
4. Press the MAGNIFIER BUTTON under the ***Upload an Excel file*** label.
5. Search and select the PAGASA Seasonal Weather Forecast Excel file on your hard drive.
6. Scroll down under the ***Tropical Cyclone Input*** section.
   - Fill in the Tropical cyclone numbers for the (6) seasonal months concerning its picture content in the PAGASA Seasonal Weather Forecast Excel file's 2nd tab.
   - Write "nda" if "no data available" for the given month.

7. Press the UPLOAD button beside the MAGNIFIER ICON button under the ***Upload an Excel file*** label.
8. Wait for the upload process to finish.

Notes

- We stopped receiving monthly emails with updated seasonal weather forecast data (in an Excel file) from PAGASA since last December 2022, after the ACAP 1.0 project ended.
- We are looking to manually update the last known PAGASA Seasonal Weather Forecast Excel file with new values, using the updated contents in the PAGASA Seasonal Forecast website for reference should we receive requests for updated Seasonal weather forecast and an updated Seasonal weather forecast file from PAGASA is not yet available.

F-11: Seasonal forecast weather system management

Priority: Essential
Risk: Safe
Functional Areas:

- Seasonal weather forecast management

Use case(s): UC-23, UC-24, UC-25, UC-36, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrator users to manually create, update, or delete the weather systems (that may affect the region) data for the seasonal weather forecast. These data are not present in the Seasonal Weather Forecast Excel file shared by PAGASA.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- Nodejs
- Render

Features

- ACAP 1.0 REST API endpoint at: POST /api/weather/seasonal/region/common
- Web user interface (UI) for managing the Weather Systems data (**ACAP Settings** -> **SEASONAL** tab)
- PAGASA Seasonal Weather Forecast Excel file parser and validator

Workflow

1. Sign-in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **ACAP Settings** -> **SEASONAL** tab.
3. Scroll down to the "Weather Systems that May Affect the Region" section.

Create a New Weather System Item

1. Press the ADD button.
2. Enter the name or label of a new weather system.
3. Press the SAVE button.
4. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without saving the new weather system.
   - Press the SAVE button to save the new weather system.

Update a Weather System Item

1. Edit the name or label of (1) one or more weather system item(s).
2. Press the SAVE button.
3. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without saving the new updates.
   - Press the OK button to save new updates.

Delete a Weather System Item

1. Click the [X] button beside a weather system item.
   - Press the RESET button to undo the unsaved item(s) deletion.
2. Press the SAVE button to start deleting the [X] marked items.
3. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without deleting the items.
   - Press the OK button to delete the items.

F-12: Upload 10-day forecast PAGASA Excel files

Priority: Essential
Risk: Safe
Functional Areas:

- 10-day weather forecast management

Use case(s): UC-26, UC-64, UC-36, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrator users to update ACAP's 10-day weather forecast data by manually uploading the contents of PAGASA's 10-Day Weather Forecast Excel files (day1.xlsx – day2.xlsx) to the database.

This option is an alternative to fine-tune the 10-day weather forecast data syncing should the Cron job in **UC-64** fail, or anytime Administrators feel the need to *manually set* the 10-Day Weather Forecast data.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- NodeJS
- Render
- PAGASA 10-Day Weather Outlook Excel files (day1.xlsx – day10.xlsx) [download]

Rainfall (%)	PAGASA 10-Day	PAGASA 10-Day Rainfall Amount Descriptive Text
<= 40%	NO RAIN	No rain is expected within the day
41% - 80%	LIGHT RAINS	Less than 60mm of rain within 24 hours
81% - 120%	MODERATE RAINS	60mm - 180mm of rain within 24 hours
value > 120%	HEAVY RAINS	greater than 180mm of rain within 24 hours

Features

- PAGASA 10-Day Outlook Weather Forecast Excel Files parser and validation
- ACAP 1.0 REST API endpoint at:
  POST /api/weather/10day
- Web user interface (UI) for multiple Excel files search and upload (**ACAP Settings** -> **10-DAY** tab)

Workflow

1. Download (10) ten pieces of the PAGASA 10-Day Weather Forecast Excel Files (day1.xlsx – day10.xlsx) from PAGASA's 10-Day Climate Forecast web page on [link] to your local hard drive.
2. Log in as an Administrator to the ACAP Admin pages.
3. Go to the ACAP Settings -> 10-DAY tab.
4. Scroll under the ***Current Data Update Summary*** section.
5. Press the SELECT FILES button under the "*Select Excel files*" label.
6. Search and select the (10) ten pieces of PAGASA 10-Day Weather Forecast Excel files saved in your hard drive on **step #1**.
7. Press the SUBMIT button beside the SELECT FILES button.
8. Wait for the upload process to finish.
9. Verify the ***Current Data Update Summary*** logs after finishing the upload process.
   - The **"*Date synced*"** item should display the current date and the latest time.

Notes

- The PAGASA 10-Day Outlook Weather Forecast Excel Files parser and validation script is sensitive to the Excel form, structure, and organization of contents. It may fail to parse and validate the Excel files if they diverge too much from the structuring and formatting that it currently knows.

F-13: 10-day forecast moon phases management

Priority: Essential
Risk: Safe
Functional Areas:

- 10-day weather forecast management

Use case(s): UC-27, UC-36, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrator users to manually create, update, or delete the **moon phase** data for the 10-day weather forecast. These data are not in the 10-Day Weather Forecast Excel files (10 pcs day1.xlsx – day10.xlsx) from PAGASA's 10-Day Climate Forecast web page.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- NodeJS
- Render

Features

- ACAP 1.0 REST API endpoint at:
  POST /api/weather/tenday/region/common
- Web user interface (UI) for managing the moon phases data (**ACAP Settings** -> **10-DAY** tab, **"*Moon Phases Input*"** section)

Workflow

Update a Weather System Item

1. Sign-in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **ACAP Settings** -> **10-DAY** tab.
3. Scroll down to the **"*Moon Phases Input*"** section.
4. Press the EDIT button.
5. Edit the text content one or more moon phase item.
6. Press the SAVE button.
7. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without saving the new updates.
   - Press the OK button to save new updates.

F-14: Manual Sync PAGASA special weather forecast

Priority: Desired
Risk: Safe
Functional Areas:

- Tropical cyclone forecast management

Use case(s): UC-28, UC-66

Description

This feature allows signed-in Administrator users to manually sync the contents of PAGASA's Tropical Cyclone Bulletin [web page] to ACAP's database.

Normally, ACAP's Cron Job (**UC-66**) automatically syncs PAGASA's Tropical Cyclone Bulletin web page contents to ACAP's database every (2) two hours (running in a GitHub Actions scheduled workflow in standard-plan GitHub account, which has only 2,000 minutes build/run time per month).

Manual syncing is beneficial in cases of severe cyclones, and PAGASA's Tropical Cyclone Bulletin web page updates its information faster.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- NodeJS
- Render

Features

- ACAP 1.0 REST API endpoint at:
  POST /api/cyclone
- Web user interface (UI) for managing the tropical cyclone data syncing process (**ACAP Settings** -> **TROPICAL CYCLONE** tab, **"*Current Data Update Summary*"** section)

Workflow

Manual syncing process

1. Sign-in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **ACAP Settings** -> **TROPICAL CYCLONE** tab.
3. Scroll down to the **"*Current Data Update Summary*"** section.
4. Press the SYNC button.
5. Wait for the syncing process to finish.

F-15: Special weather wind speed and municipalities management

Priority: Essential
Risk: Safe
Functional Areas:

- Tropical cyclone forecast management

Use case(s): UC-29, UC-30, UC-31, UC-32, UC-36, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrator users to manually create, update, or delete wind signal numbers and tag/untag them with provinces and municipalities.

Saved provinces and municipalities tagged with a wind signal will appear as selectable options in the Create Special Weather Advisory Bulletin page's province and municipality selectors and become visible under the ACAP Services, Special Weather Forecast section.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- Nodejs
- Render

Features

- ACAP 1.0 REST API endpoint at:
  POST /api/weather/cyclone/region/common
- Web user interface (UI) for managing the Weather Systems data

Workflow

1. Sign-in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **TROPICAL CYCLONE** tab.
3. Scroll down to the ***"Wind Speed List Editor"*** section.

Create a New Wind Speed List Group

1. Press the ADD button.
2. Enter a wind signal number in the "wind signal" text box (signal 1 – 10).
3. Press the EDIT button beside the "wind signal" number.
4. In the ***"Affected Provinces and Municipalities Form"*** window that will appear:
   - Select a province
   - Select (1) one or more municipalities
   - Press the OK button to confirm the selected province and municipalities
   - Press CANCEL to dismiss the window
5. Repeat from step #1 - #4 as necessary.
6. Press the SAVE button to save changes.
8. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without saving the new items.
   - Press the OK button to save new items.

Update a Wind Speed List Group

1. Update the wind signal number in (1) or more groups of "wind signal" text box (signal 1 – 10).
2. Press the EDIT button beside any "wind signal" group.
3. In the **"*Affected Provinces and Municipalities Form*"** window:
   - Select a province
   - Select (1) one or more municipalities to add

- Press the [X] button beside a municipality to remove it from the list
- Press the OK button to confirm the selected or deleted province and municipalities
- Press CANCEL to dismiss the window

4. Repeat from **steps #1 - #3** as necessary.
5. Press the SAVE button to save changes.
1. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without deleting the items.
   - Press the OK button to delete the items.

Delete a Wind Speed List Group

2. Press the **"trash can icon"** at the leftmost side of a province-municipality group under a "wind signal" text box (signal 1 – 10) to delete the contents of the province and selected municipalities under it.
3. Press the **[X] button** beside the EDIT button to delete a "wind signal" list group including all selected provinces and municipalities under it.
4. Press the SAVE button to save changes.
5. In the ***"Save Changes"*** window:
   - Press the CANCEL button to dismiss the window without deleting the items.
   - Press the OK button to delete the items.

Notes

- We let Administrators manually encode the wind speed and typhoon-affected municipalities so they will have more liberty in adding or removing typhoon-affected municipalities.
- Typhoon-affected provinces and municipalities will be selectable in the Create Special Weather Bulletin's Location selection options.

F-16: Generate seasonal crop recommendations website preview

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-21, UC-22, UC-23, UC-62, UC-63, UC-65
Use case(s): UC-23, UC-24, UC-32, UC-35

Description

This feature allows Administrators to generate a Seasonal Crop Recommendation for a given month, using the month's current rainfall forecast data, cropping calendar, and crop recommendations data only viewable as text content via the website for quick preview purposes.

Unlike the ***"Public Seasonal Recommendations"*** generator (**F-06**), the resulting Seasonal crop recommendations of this feature link with a selected month's seasonal *rainfall forecast*, *"all crop stages*" from a set of crop stage(s) included in the 1st and 2nd halves of a selected month's cropping calendar, and "*all activities."* Therefore, its web user interface (UI) does not have options for a crop stage and activity.

- Administrators should proceed to **UC-36** should they want to "preview" the *PDF file* and formatting of the generated recommendations.
- Administrators should proceed to **UC-37** should they want to upload the generated bulletin PDF file to the site-wide Seasonal Crop Recommendations downloads page (**UC-15**), which also creates a Crop Recommendations report log under their account (**UC-37**).

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Web user interface (UI) for generating a full Seasonal Crop Recommendations for a given month
- Web user interface (UI) for viewing the dynamic-generated Seasonal Crop Recommendations text content in the Administrator-accessible website

Workflow

Update Instructions

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Press the CREATE BULLETIN button.
4. Select the *"**Regional Seasonal Climate Outlook and Advisory**"* option in the *"Select a Crop Bulletin Type"* window.
5. Fetch the full seasonal weather forecast of all provinces under the designated region.
6. Select options in the *"Selection Options"* selectors while viewing a summary of selected options in the *"Selection Summary"* section:
    - **Province**
    - **Municipality**
    - **Crop type** (default, Rice)
    - **Month**
7. Press the GENERATE button.
8. View the resulting Seasonal Crop Recommendations under the ***Crop Recommendations*** section.

- The recommendations' text content for PDF shows by default in the "PDF FORM" tab.
- Press the "SMS FORM" tab to view the recommendations' SMS text version.

Regional Seasonal Climate Outlook and Advisory Crop Recommendations Bulletin Selection Process

1. Initialize the Location selector with the list of provinces and municipalities.
2. Fetch the full seasonal weather forecast of all provinces under the designated region.
3. Select a province.
4. Fetch data by the selected province:
    a. Cropping Calendar (Rice only)
5. Select a municipality.
    a. Find the cropping calendar data of the selected province from **step #4-a**.
6. Select crop type.
    a. (Only the "Rice" crop type is available for now)
7. Select a month.
    a. Find all crop stages (inside the 1st and 2nd-month halves) of the municipality's (Rice) cropping calendar.
    b. Find the month's rainfall forecast from the province's seasonal weather forecast data.
8. Fetch crop recommendations data with the selected municipality's crop stages (all) and the month's rainfall forecast.
9. Aggregate and organize the crop recommendations for text content display in the website.
10. Display the seasonal crop recommendations results.

Notes

- This feature uses the Firebase JavaScript SDK (for web), running in the React client website for fetching and displaying the Crop Recommendations data directly from the Firestore database.

  This decision is to ensure a speedy content delivery, as opposed to loading the data from a NodeJS REST API (running on standard plan (free-tier) pricing plan Render account), which is subject to 1 – 2 minutes boot-up time after its "sleeps after 15 minutes of inactivity."

- This feature's data source depends in the prerequisites, described in more detail in UC-19, UC-21, UC-22, UC-23, UC-62, UC-63, UC-65.

F-17: Generate 10-day crop recommendations website preview

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-26 (Optional) UC-27, UC-64
Use case(s): UC-33, UC-35

Description

This feature allows Administrators to generate a 10-day Weather Outlook Crop Recommendation (only for quick preview purposes), spanning inclusive dates and month(s) within the latest 10-day weather forecast date range stored in ACAP's database. It generates crop recommendations, connecting the crop stage(s) of the inclusive month(s) in the 10-day date range from the cropping calendar, and crop recommendations data only viewable as text content via the Administrator-only accessible website for quick preview purposes.

Unlike the ***"Public 10-Day Weather Outlook Recommendations"*** generator (**F-07**), the resulting 10-Day Weather Outlook crop recommendations of this feature link with *all crop stages* from the cropping calendar of "*month(s) falling inside the latest 10-day weather forecast date range"*, and "*all activities."* Therefore, its web user interface (UI) has no options for selecting a date, crop stage, and activity.

Also, unlike the ***"Public Seasonal Recommendations,"*** the crop recommendations generated by this feature have no links with the 10-day weather forecast's *rainfall forecast*. It only uses the 10-day weather forecast's "*(10) ten-day date range validity period"* to determine the inclusive month(s) to link with crop stages from the cropping calendar.
10-Day Farm Weather Outlook and Recommendations for Administrator preview are currently available only for the "Rice" crop type.

- Administrators should proceed to **UC-36** should they want to "preview" the *PDF file* and formatting of the generated recommendations.
- Administrators should proceed to **UC-38** should they want to upload the generated bulletin PDF file to the site-wide 10-Day eFarm Weather Outlook Crop Recommendations downloads page (**UC-14**), which also creates a 10-Day outlook Crop Recommendations report log under their account (**UC-38**).

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Web user interface (UI) for generating a full 10-Day Farm and Weather Outlook Crop Recommendations for using the (10) ten dates in the latest 10-Day Weather Forecast
- Web user interface (UI) for generating and viewing the dynamic-generated 10-Day Farm Weather Outlook and Advisory Crop Recommendations text content in the Administrator-accessible website

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.

2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Press the CREATE
4. BULLETIN button.
5. Select the *"**10-Day Farm Weather Outlook and Advisory Bulletin**"* option in the *"Select a Crop Bulletin Type"* window.
6. Select options in the *"Selection Options"* selectors while viewing a summary of selected options in the *"Selection Summary"* section:
    a. **Province**
    b. Municipality
7. Press the GENERATE button.
8. View the resulting 10-Day Farm Weather Outlook and Advisory Crop Recommendations under the ***Crop Recommendations*** section.
    a. The recommendations' text content for PDF shows by default in the "PDF FORM" tab.
    b. Press the "SMS FORM" tab to view the recommendations' SMS text version.

10-Day Farm Weather Outlook and Advisory Selection Process

1. Initialize the Location selector with the list of provinces and municipalities.
2. Select a province.
3. Fetch data by the selected province:
    a. Cropping Calendar (Rice only)
4. Select a municipality.
5. Fetch data by the selected municipality:
    a. 10-Day Weather Forecast
    b. Find the *inclusive month(s)* within the selected municipality's 10-day weather forecast validity period.
        i. i.e., for valid forecast date Aug. 23 – Sept. 1, 2023, the *inclusive months* are: August (2nd half) and Sept (1st half)
        ii. i.e., for valid forecast date Feb. 5 – Feb. 14, 2023, the *inclusive month* is: February (1st half and 2nd half)
    c. Find the crop stages of the municipality's *inclusive months* from the cropping calendar.
6. Fetch crop recommendations data with the selected municipality's crop stages.

Notes

- This feature uses the Firebase JavaScript SDK (for web), running in the React client website for fetching and displaying the Crop Recommendations data directly from the Firestore database.

  This decision is to ensure a speedy content delivery, as opposed to loading the data from a NodeJS REST API (running on standard plan (free-tier) pricing plan Render account), which is subject to 1 – 2 minutes boot-up time after its "sleeps after 15 minutes of inactivity."

- As mentioned in ACAP 1.0's **UC-64**, we are only running the Cron job for fetching and uploading the 10-Day Weather Forecast Excel files from PAGASA daily at an educated guess (9:00 AM – 12:00 PM Philippine local time), judging from past observations. However, this schedule does not always seem in sync with their time of updating its 10-Day Weather Forecast Excel files from their website.
    - As such, we advise DA-RFO 5 to manually upload the 10-Day Weather Forecast Excel files like described in **UC-28**, should they observe the need for a more updated, latest 10-Day Weather

Forecast from PAGASA before generating a crop recommendation.

F-18: Generate special weather crop recommendations website preview

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-28 (Optional), UC-29, UC-30, UC-31, UC-66
Use case(s): UC-34, UC-35

Description

This feature allows Administrators to generate a Special Weather Outlook Crop Recommendation (only for quick preview purposes), spanning inclusive dates and month(s) within the *latest 10-day weather forecast date range* stored in ACAP's database.

*This feature's processing logic works like the **F-17: Generate 10-day crop recommendations website preview**, plus it must meet (2) two other conditions:*

- ACAP's special weather forecast data contains typhoon data indicating a *"There is an active Tropical Cyclone within the Philippine Area of Responsibility,"* web scraped from the PAGASA's Tropical Cyclone Bulletin web page [link], (**UC-66** or **UC-28**)
- Administrators have manually encoded or updated typhoon-affected provinces and municipalities in ***F-15: Special weather wind speed and municipalities management*** (**UC-29**, **UC-30**, **UC-31**)
- (Optional) Administrators have manually synced PAGASA's Tropical Cyclone Bulletin web page contents to ACAP's database, **UC-28**.

Moreover, the special weather forecast only considers the "*current date's crop stage"* (1st half or 2nd half of the month), unlike the 10-day crop recommendations, which take in both the start and end date's crop stages (can span at most (2) two months).

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Web user interface (UI) for generating a full Special Weather Crop Recommendations for using the (10) ten dates in the latest 10-Day Weather Forecast
- Web user interface (UI) for generating and viewing the dynamic-generated Special Weather Crop Recommendations text content in the Administrator-accessible website

Workflow

Update Process

*(Similar to **F-17**)*

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Press the CREATE BULLETIN button.
4. Select the *"**Special Weather Advisory**"* option in the *"Select a Crop Bulletin Type"* window.
5. Select options in the *"Selection Options"* selectors while viewing a summary of selected options in the *"Selection Summary"* section:

   a. **Province**
   b. Municipality
6. Press the GENERATE button.
7. View the resulting Special Bulletin Crop Recommendations under the ***Crop Recommendations*** section.
   a. The recommendations' text content for PDF shows by default in the "PDF FORM" tab.
   b. Press the "SMS FORM" tab to view the recommendations' SMS text version.

Special Weather Advisory Crop Recommendations Selection Process

*(Slightly similar to **F-17**)*

1. Initialize the Location selector with the list of provinces and municipalities.
   a. Disable selection of provinces and municipalities except those encoded by an Administrator (**UC-29**, **UC-30**, **UC-31**) for selection.
2. Select a province.
3. Fetch data by the selected province:
   a. Cropping Calendar (Rice only)
4. Select a municipality.
5. Fetch data by the selected municipality:
   a. 10-Day Weather Forecast
   b. Find the *inclusive month half* (only 1st half or 2nd half) where the ***"current date"*** belongs
      i. i.e., for August 27, 2023, the *inclusive month* is: August (2nd half)
      ii. i.e., for Feb. 14, 2023, the *inclusive month* is: February (1st half)
   c. Find the crop stage (at most only one) of the municipality's *inclusive month* from the cropping calendar.
6. Fetch crop recommendations data with the selected municipality's crop stage.

Notes

- This feature uses the Firebase JavaScript SDK (for web), running in the React client website for fetching and displaying the Crop Recommendations data directly from the Firestore database.

  This decision is to ensure a speedy content delivery, as opposed to loading the data from a NodeJS REST API (running on standard plan (free-tier) pricing plan Render account), which is subject to 1 – 2 minutes boot-up time after its "sleeps after 15 minutes of inactivity."

F-19: View the Tagalog or English translation of generated recommendations preview

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: (Features) F-16 / F-17 / F-18
Use case(s): UC-35

Description

This feature allows Administrators to toggle viewing the *generated crop recommendations text for website preview* in Tagalog or English.

It requires having a crop recommendation (seasonal, 10-day, or special weather outlook) generated text content visible in **F-16**, **F-17,** or **F-18**.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Tagalog or English text translation of generated crop recommendations preview
- Client-side (website) logic for displaying the Tagalog or English text (Text translations are fetched during **F-16**, **F-17**, or **F-18**)

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Create a Crop Recommendation for Seasonal, 10-day Farm and Weather Outlook or Special Weather following the ***"Update Process"*** flow in **F-16**, **F-17**, or **F-18**.
4. Press the TAGALOG / ENGLISH button on the upper right of the resulting crop recommendations text.

F-20: Preview PDF bulletin of generated crop recommendations

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: (Features) F-16 / F-17 / F-18
Use case(s): UC-36

Description

This feature allows Administrators to preview the *generated crop recommendations text for website preview* in Tagalog or English in its **PDF file form**.

The PDF file shows how the generated recommendations will look in the actual *PDF file* for a Seasonal, 10-day Farm and Weather Outlook or Special Weather bulletin.

It requires having a crop recommendation (seasonal, 10-day, or severe cyclone weather outlook) generated text content visible in **F-16**, **F-17,** or **F-18**.

While viewing crop recommendations in its PDF file can also allow Administrators to *"download"* the PDF file, this does not upload the PDF file to ACAP's Bulletins downloads web page (**UC-06**).

Administrators should create a Crop Recommendation report by pressing the **"SAVE"** button (beside the PREVIEW button) to automatically upload the PDF bulletin to its designated bulletin downloads sub-page.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- NodeJS
- Render

Features

- ACAP 1.0 REST API endpoint (**seasonal**) at: POST /api/reports/seasonal/crops
- ACAP 1.0 REST API endpoint (**10-day**) at: POST /api/reports/tenday/crops
- ACAP 1.0 REST API endpoint (**special**) at: POST /api/reports/special/crops
- Client-side (website) logic for displaying the PDF file version of the generated crop recommendations, fetched from the REST API

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Create a Crop Recommendation for Seasonal, 10-day Farm and Weather Outlook or Special Weather following the ***"Update Process"*** flow in **F-16**, **F-17**, or **F-18**.
4. Press the PREVIEW button beside the SAVE button in the lower right panel.
5. Wait for the PDF file preview to appear.

Fetch PDF File Preview Process

1. *(Require F-16, F-17 or F-18).*
2. Press the PREVIEW button.
3. Send the following as body parameters to the API endpoint for **seasonal** recommendations:
    - crop, language, month, region, province, municipality, operation="preview"

4. Send the following as body parameters to the API endpoint for **10-day farm and weather outlook** recommendations:
    - language, region, province, municipality, operation="preview"
5. Send the following as body parameters to the API endpoint for **special weather** recommendations:
    - language, region, province, municipality, date, operation="preview"
6. Wait for the server to return a PDF file according to sent parameters.
7. Display the PDF file in the client website's PDF preview window.

Create Seasonal PDF File Process

(Similar to **F-16**, but occurs in the NodeJS server)

1. Validate POST parameters.
    a. Return an error response if there are invalid values.
2. Fetch the full **seasonal weather forecast** of all provinces under the designated region.
    a. Find the month's **rainfall forecast** from the province's seasonal weather forecast data.
3. Fetch **cropping calendar** data by the province parameter.
4. Find the cropping calendar data of the input municipality and month from the cropping calendar data produced in **step #1.**
    a. Find *all crop stages* (inside the 1st and 2nd-month halves) of the municipality's (Rice) cropping calendar.
5. Fetch **crop recommendation data** with the input municipality's crop stages (all) and the month's rainfall forecast.
6. Aggregate and organize the seasonal crop recommendations for text content in the PDF file.
7. Create the PDF file using the processed data.
8. Send the created PDF file as response to the requesting website.

Create 10-Day Farm and Weather Outlook PDF File Process

(Similar to **F-17**, but occurs in the NodeJS server)

1. Validate POST parameters.
    a. Return an error response if there are invalid values.
2. Fetch the **cropping calendar** data of the input province.
3. Fetch the **10-day weather forecast data** of the input municipality.
4. Find the *inclusive month(s)* within the input municipality's 10-day weather forecast validity period.
    a. i.e., for valid forecast date Aug. 23 – Sept. 1, 2023, the *inclusive months* are: August (2nd half) and Sept (1st half)
    b. i.e., for valid forecast date Feb. 5 – Feb. 14, 2023, the *inclusive month* is: February (1st half and 2nd half)
5. Find the crop stages of the municipality's *inclusive months* from the cropping calendar.
6. Fetch crop recommendations data with the input municipality's *crop stages*.
7. Aggregate and organize the seasonal crop recommendations for text content displayed in the PDF file.
8. Create the PDF file using the processed data.
9. Send the created PDF file as response to the requesting website.

Create Special Weather Forecast PDF File Process

(Similar to **F-18**, but occurs in the NodeJS server)

1. Validate POST parameters.
    a. Return an error response if there are invalid values.
2. Fetch the **cropping calendar** data of the input province.
3. Fetch the **10-day weather forecast data** of the input municipality.
4. Find the *inclusive month half* (only 1st half or 2nd half) where the ***"current date"*** belongs.
    i. i.e., for August 27, 2023, the *inclusive month* is: August (2nd half)
    ii. i.e., for Feb. 14, 2023, the *inclusive month* is: February (1st half)
5. Find the crop stage (at most only one) of the municipality's *inclusive month* from the cropping calendar.
6. Fetch crop recommendations data with the input municipality's *crop stage*.
7. Download the latest parsed PAGASA typhoon track picture file (URL stored in the database) to the server.
    a. Resize this image to a lower-quality (but readable) picture resolution to avoid creating a PDF file with a large file size.
8. Aggregate and organize the special weather forecast crop recommendations for text content displayed in the PDF file.
9. Create the PDF file using the processed data.
10. Send the created PDF file as response to the requesting website.

Notes

PDF File Requirements

- The PDF file should not exceed (1) one page, regardless of crop recommendations and text content length.
    - The crop recommendations font size should shrink to fit a fixed-size area in the PDF file
- The PDF file should have selectable and searchable text content
- The PDF file size should be small (around 500 KB – 1 MB)
- The PDF file should display the dynamic weather forecast and crop recommendation content

F-21: Create seasonal crop recommendations report

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: (Features) F-16
Use case(s): UC-37

Description

This feature allows Administrators to:

- Create (save) a **Crop Recommendation Report** of the *generated crop recommendations text for website preview*. *A Crop Recommendation Report is a log or summary of the generated crop recommendation saved in the Administrator's **"Crop Recommendations"** reports list.*
- ***Generate a crop recommendation bulletin PDF file*** and automatically **upload** it to its designated bulletins downloads page (**UC-06**)

Creating a Seasonal Recommendations Report also creates a global Bulletin log of the uploaded PDF file. This Bulletin log document and uploaded PDF file *gets overwritten by the last Administrator who creates or saves a Crop Recommendations Report last*, in case *multiple Administrators* simultaneously try to create a report using the same province, municipality, crop, and month.

- The DA RFO 5 office expects only (1) one Administrator (Sir Sandy) to create crop recommendations reports.
- The DA RFO 5 has internal arrangements for assigning who will create the crop recommendation reports.

This feature requires having a seasonal crop recommendation generated text content visible in **F-16**.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase Cloud Storage
- React
- Express
- NodeJS
- Render

Features

It shares the REST API endpoints with **F-20 (seasonal)**, except now, it does not return a PDF file response.

- ACAP 1.0 REST API endpoint (**seasonal**) at: POST /api/reports/seasonal/crops

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Create a Seasonal Crop Recommendation following the ***"Update Process"*** flow in **F-16**.
4. Press the SAVE button beside the PREVIEW button in the lower right panel.
5. Wait for the Report to finish saving.

Create Seasonal Crop Recommendation Report Process (POST)

1. *(Require F-16).*
2. Press the SAVE button beside the PREVIEW button.

3. Send the following as body parameters to the API endpoint for **seasonal** recommendations:
    - crop, language, month, region, province, municipality, operation=**"*create*"**
4. Wait for the server to finish creating the report and uploading the PDF file to the Firebase Cloud Storage.
5. Navigate to the saved Crop Recommendation Report after **step #4** finishes.
6. View the uploaded Seasonal Crop Recommendation bulletin file in its designated bulletins PDF downloads page in https://amia-cis.github.io/bulletins/seasonal-outlook/

Create Seasonal Report and PDF File Upload Process

(Similar to **F-16** and **F-20**, but occurs in the NodeJS server)

9. Validate POST parameters.
    a. Return an error response if there are invalid values.
10. Fetch the full **seasonal weather forecast** of all provinces under the designated region.
    a. Find the month's **rainfall forecast** from the province's seasonal weather forecast data.
11. Fetch **cropping calendar** data by the province parameter.
12. Find the cropping calendar data of the input municipality and month from the cropping calendar data produced in **step #1.**
    a. Find *all crop stages* (inside the 1st and 2nd-month halves) of the municipality's (Rice) cropping calendar.
13. Fetch **crop recommendation data** with the input municipality's crop stages (all) and the month's rainfall forecast.
14. Aggregate and organize the seasonal crop recommendations for text content in the PDF file.
15. Create the **PDF file** using the processed data.
    a. Use the *PDF file naming convention*:
        - {province}_{municipality}_{crop}_{month-code}_{year}.pdf,
        - i.e., Albay_Daraga_Rice_mar_2023.pdf
16. Upload the PDF file to Firebase Cloud Storage.
17. Create a **Bulletin log** document linked with the PDF file from **step #7**.
    a. Use the Firestore *document naming convention* for the Bulletin log:
        - {province}_{municipality}_{crop}_{month-code}_{year},
        - i.e., albay_daraga_rice_mar_2023
18. Create a **Seasonal Crop Recommendations Report** (Firestore document).

F-22: Create 10-day forecast crop recommendations report

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: (Features) F-17
Use case(s): UC-38

Description

This feature allows Administrators to:

- Create (save) a **10-Day Farm Weather Outlook and Advisory Bulletin Crop Recommendation Report** of the *generated crop recommendations text for website preview*. *A Crop Recommendation Report is a log or summary of the generated crop recommendation saved in the Administrator's **"Crop Recommendations"** reports list.*
- ***Generate a crop recommendation bulletin PDF file*** and automatically **upload** it to its designated bulletins downloads page (**UC-06**)

Creating a 10-Day Farm Weather Outlook and Advisory Bulletin Recommendations Report also creates a global Bulletin log of the uploaded PDF file. This Bulletin log document and uploaded PDF file *gets overwritten by the last Administrator who creates or saves a Crop Recommendations Report last*, in case multiple Administrators simultaneously try to create a report using the same province, municipality, crop.

- The DA RFO 5 office expects only (1) one Administrator (Sir Sandy) to create crop recommendations reports.
- The DA RFO 5 has internal arrangements for assigning who will create the crop recommendation reports.

This feature requires having a seasonal crop recommendation generated text content visible in **F-16**.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase Cloud Storage
- React
- Express
- NodeJS
- Render

Features

It shares the REST API endpoints with **F-20 (10-day)**, except now, it does not return a PDF file response.

- ACAP 1.0 REST API endpoint (**10-day**) at: POST /api/reports/tenday/crops

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Create a Seasonal Crop Recommendation following the ***"Update Process"*** flow in **F-17**.
4. Press the SAVE button beside the PREVIEW button in the lower right panel.
5. Wait for the Report to finish saving.

Create 10-Day Farm Weather Outlook and Advisory Bulletin Crop Recommendation Report Process (POST)

1. *(Require F-17).*
2. Press the SAVE button beside the PREVIEW button.
3. Send the following as body parameters to the API endpoint for **10-day farm and weather outlook** recommendations:
    - language, region, province, municipality, operation=***"create"***
4. Wait for the server to finish creating the report and uploading the PDF file to the Firebase Cloud Storage.
5. Navigate to the saved Crop Recommendation Report after **step #4** finishes.
6. View the uploaded 10-Day Farm Weather Outlook and Advisory Bulletin Crop Recommendation bulletin file in its designated bulletins PDF downloads page in https://amia-cis.github.io/bulletins/weather/

Create 10-Day Farm Weather Report and PDF File Upload Process

(Similar to **F-17** and **F-20**, but occurs in the NodeJS server)

1. Validate POST parameters.
    a. Return an error response if there are invalid values.
2. Fetch the **cropping calendar** data of the input province.
3. Fetch the **10-day weather forecast data** of the input municipality.
4. Find the *inclusive month(s)* within the input municipality's 10-day weather forecast validity period.
    a. i.e., for valid forecast date Aug. 23 – Sept. 1, 2023, the *inclusive months* are: August (2nd half) and Sept (1st half)
    b. i.e., for valid forecast date Feb. 5 – Feb. 14, 2023, the *inclusive month* is: February (1st half and 2nd half)
5. Find the crop stages of the municipality's *inclusive months* from the cropping calendar.
6. Fetch crop recommendations data with the input municipality's *crop stages*.
7. Aggregate and organize the seasonal crop recommendations for text content displayed in the PDF file.
8. Create the **PDF file** using the processed data.
    a. Use the *PDF file naming convention*: {province}_{municipality}_10_day.pdf i.e., Albay_Daraga_Rice_10_day.pdf
9. Create a **Bulletin log** document linked with the PDF file from **step #8**.
    a. Use the Firestore *document naming convention* for the Bulletin log:
    b. {province}_{municipality}_10_day i.e., albay_daraga_10_day
10. Create a **10-Day** Farm Weather Outlook and Advisory Bulletin **Crop Recommendations Report** (Firestore document).

F-23: Create special weather crop recommendations report

Priority: Essential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: (Features) F-18
Use case(s): UC-39

Description

This feature allows Administrators to:

- Create (save) a **Special Weather Crop Recommendation Report** of the *generated crop recommendations text for website preview. A Crop Recommendation Report is a log or summary of the generated crop recommendation saved in the Administrator's **"Crop Recommendations"** reports list.*
- ***Generate a crop recommendation bulletin PDF file*** and automatically **upload** it to its designated bulletins downloads page (**UC-06**)

Creating a Special Weather Recommendations Report also creates a global Bulletin log of the uploaded PDF file. This Bulletin log document and uploaded PDF file *gets overwritten by the last Administrator who creates or saves a Crop Recommendations Report last*, in case multiple Administrators simultaneously try to create a report using the same province, municipality, crop.

- The DA RFO 5 office expects only (1) one Administrator (Sir Sandy) to create crop recommendations reports.
- The DA RFO 5 has internal arrangements for assigning who will create the crop recommendation reports.

This feature requires having a seasonal crop recommendation generated text content visible in **F-18**.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase Cloud Storage
- React
- Express
- NodeJS
- Render

Features

It shares the REST API endpoints with **F-20 (special)**, except now, it does not return a PDF file response.

- ACAP 1.0 REST API endpoint (**special**) at: POST /api/reports/special/crops

Workflow

Update Process

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. Create a Seasonal Crop Recommendation following the ***"Update Process"*** flow in **F-18**.
4. Press the SAVE button beside the PREVIEW button in the lower right panel.
5. Wait for the Report to finish saving.

Create Special Weather Crop Recommendation Report Process (POST)

1. *(Require F-18).*
2. Press the SAVE button beside the PREVIEW button.

3. Send the following as body parameters to the API endpoint for **10-day farm and weather outlook** recommendations:
    - language, region, province, municipality, operation=***"create"***
4. Wait for the server to finish creating the report and uploading the PDF file to the Firebase Cloud Storage.
5. Navigate to the saved Crop Recommendation Report after **step #4** finishes.
6. View the uploaded 10-Day Farm Weather Outlook and Advisory Bulletin Crop Recommendation bulletin file in its designated bulletins PDF downloads page in https://amia-cis.github.io/bulletins/weather/

Create 10-Day Farm Weather Report and PDF File Upload Process

(Similar to **F-18** and **F-20**, but occurs in the NodeJS server)

1. Validate POST parameters.
    a. Return an error response if there are invalid values.
2. Fetch the **cropping calendar** data of the input province.
3. Fetch the **10-day weather forecast data** of the input municipality.
4. Find the *inclusive month half* (only 1st half or 2nd half) where the ***"current date"*** belongs.
    i. i.e., for August 27, 2023, the *inclusive month* is: August (2nd half)
    ii. i.e., for Feb. 14, 2023, the *inclusive month* is: February (1st half)
5. Find the crop stage (at most only one) of the municipality's *inclusive month* from the cropping calendar.
6. Fetch crop recommendations data with the input municipality's *crop stage*.
7. Download the latest parsed PAGASA typhoon track picture file (URL stored in the database) to the server.
    a. Resize this image to a lower-quality (but readable) picture resolution to avoid creating a PDF file with a large file size.
8. Aggregate and organize the special weather forecast crop recommendations for text content displayed in the PDF file.
9. Create the **PDF file** using the processed data.
    a. Use the *PDF file naming convention*: {province}_{municipality}_special.pdf i.e., Albay_Daraga_Rice_ special.pdf
10. Create a **Bulletin log** document linked with the PDF file from **step #9**.
    a. Use the Firestore *document naming convention* for the Bulletin log: {province}_{municipality}_special i.e., Albay_Daraga_Rice_special
11. Create a **Special Weather Crop Recommendations Report** (Firestore document).

F-24: View crop recommendations reports list

Priority: Esential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19
Use case(s): UC-40

Description

The Crop Recommendations Reports List displays an overview summary of the *signed-in Administrator's* Crop Recommendations logs in a paginated table, which can be filterable by seasonal, 10-day, or special weather weather recommendations type.

Crop Recommendations reports (logs) contain a summary of the bulletin PDF's contents created at the time.

Administrators can view their reports arranged in descending order by the latest created report date. The topmost row represents the *signed-in Administrator's latest Crop Recommendations Report.* It is also a summary of the (seasonal, 10-day, or special weather) **bulletin PDF** posted on the public bulletins downloads web page if the signed-in Administrator is the one who created the last report, *in case multiple Administrators attempt to create* a similar seasonal, 10-day outlook, or special weather crop recommendation report.

The system expects only *(1) Adminstrator* to create bulletins and reports (Sir Sandy). Internal arrangements of who will publish PDF bulletins and when are open for discussion among the DA RFO 5. Thus, the Adminstrator *who last created the report* will have their PDF bulletin posted on the site-wide bulletins downloads page, *effectively overwriting PDF bulletins bearing the same file name previously published by other Administrators*.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Website user interface (UI) for displaying the signed-in Administrator's Crop Recommendations list

Workflow

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. View the list of Crop Recommendations reports in a paginated table. The seasonal crop recommendations are loaded first by default.
    - Fetch the signed-in user's *"seasonal"* crop recommendations list (which also contains the SMS text version)
    - Fetch the signed-in user's contacts list.
4. Filter the crop recommendations list by selecting a crop recommendation type in the "Bulletin Type" drop-down selectable options. Available options are:
    - Seasonal Crop Recommendations
    - 10-Day Crop Recommendations
    - Special Weather Recommendations
5. Fetch crop recommendations by the selected report type from **step #4**.
6. View the filtered Crop Recommendations list.

Notes

- Administrators will see an empty Crop Recommendations list if they have not yet created (SAVED) a seasonal, 10-day, or special weather crop recommendation report.

F-25: View a crop recommendation report

Priority: Esential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-37, UC-38, UC-39
Use case(s): UC-41, UC-42

Description

This feature allows signed-in Administrators to **"view"** their Crop Recommendation Report, which contains a log of the PDF bulletin contents they created at a time.

The Crop Recommendation Report contains the *PDF Form* text content of the generated crop recommendations and its *SMS text* counterpart (currently, a placeholder for the actual SMS text message). It also displays information such as the rainfall forecast, crop stage(s), activities, and other factors that make up a bulletin.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Website user interface (UI) for displaying the signed-in Administrator's Crop Recommendation Report

Workflow

View a Crop Recommendation Report

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **Crop Recommendations** tab in the left sidebar menu.
3. View the list of Crop Recommendations reports in a paginated table. The seasonal crop recommendations are loaded first by default.
4. Filter the crop recommendations list by selecting a crop recommendation type in the "Bulletin Type" drop-down selectable options. Available options are:
    - Seasonal Crop Recommendations
    - 10-Day Crop Recommendations
    - Special Weather Recommendations
5. Click the row corresponding to a target Crop Recommendation Report for inspection.
6. View the Report's contents on the resulting **Crop Recommendation Report page**.

View the PDF form of a crop recommendation report

1. The Crop Recommendation page displays the ***"PDF form"*** by default. The "PDF form" shows the generated crop recommendations text content in a simple bullet-list format.
2. Carrying on from the last step in the "View a Crop Recommendation Report" section, press the "PDF FORM" tab to switch to viewing the crop recommendation report's "PDF Form."

View the SMS form of a crop recommendation report

1. Carrying on from the last step in the "View a Crop Recommendation Report" section, press the "SMS FORM" tab to switch to viewing the crop recommendation report's "SMS Form."

2. The Crop Recommendation's ***"SMS form"*** shows the generated crop recommendations text's Simple Message Service (SMS) text content counterpart, currently a placeholder for actual crop recommendations for sending through text.

F-26: Delete a crop recommendation report

Priority: Esential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-37, UC-38, UC-39, UC-41, UC-42
Use case(s): UC-43

Description

This feature allows signed-in Administrators to **"delete"** their Crop Recommendation Report, which contains a log of the PDF bulletin contents they created at a time (**F-25**).

Deleting a Crop Recommendation *deletes the log* of a bulletin PDF only. *It does not delete the current-posted bulletin PDF file* available for download on the site-wide bulletins downloads page (**UC-06**), which may or may not be associated with the Crop Recommendation report during the time of deletion (depending on which Administrator published the latest bulletin PDF).

There are several ways to *delete a published bulletin PDF file* uploaded to the public bulletin PDF downloads page for discussion in more detail in **F-27: Delete a bulletin PDF**.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React
- Express
- NodeJS
- Render

Features

- Website user interface (UI) for displaying and deleting the signed-in Administrator's Crop Recommendation Report
- ACAP 1.0 REST API endpoint at:
  DELETE /api/reports/seasonal/crops

Workflow

Delete a crop recommendation report process (DELETE)

1. *(Require **F-25**)*
2. When viewing the Crop Recommendation Report page, press the **"DELETE"** button on the top right of the page.
3. In the *"Delete Report"* window:
   - Press the CANCEL button to dismiss the window without deleting the report.
   - Press the DELETE button to start deleting the report.
4. Send the following as body parameters to the assigned API endpoint after pressing the DELETE button in the "Delete Report" window:
   - docId (crop recommendation report's unique ID)
5. Navigate to the Crop Recommendation Reports List after **step #2 – DELETE** (option) finishes.

Report Deletion Process

(Occurs in the NodeJS server)

1. Validate DELETE parameters.
   - Return an error response if there are invalid values.
2. Delete the Firestore document from the database.
3. Send a success/fail response back to the client website.

F-27: Delete a bulletin PDF

Priority: Esential
Risk: Safe
Functional Areas:

- Crop Recommendations Management

Prerequisites: UC-19, UC-37, UC-38, UC-39
Use case(s): UC-18, UC-37, UC-38, UC-39

Description

This feature allows signed-in Administrators to delete the latest uploaded (seasonal, 10-day, or severe cyclone weather) **bulletin PDFs** in the *public PDF downloads page* (**UC-06**) regardless of which Administrator uploaded it.

ACAP treats bulletin PDFs as separate, independent entities from Crop Recommendation Reports, and thus, must be dealt with separately as mentioned in **F-24**:

"The system expects only (1) Adminstrator to create bulletins and reports (Sir Sandy). Internal arrangements of who will publish PDF bulletins and when are open for discussion among the DA RFO 5. Thus, the Adminstrator who last created the report will have their PDF bulletin posted on the site-wide bulletins downloads page, effectively overwriting PDF bulletins bearing the same file name previously published by other Administrators."

Deleting a bulletin PDF file from the public downloads page does not delete its Crop Recommendation Report log associated with it. Crop Recommendation Reports remain in an Administrator's account, which Administrators can optionally delete separately from the PDF bulletin file.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React
- Express
- NodeJS
- Render

Features

- Website user interface (UI) for displaying and deleting the signed-in Administrator's Crop Recommendation Report
- ACAP 1.0 REST API endpoint at:
  DELETE /api/reports/bulletins

Workflow

Option 1: Delete a PDF bulletin file (Website)

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. View a bulletin PDF for downloading described in the *"Download a bulletin PDF"* steps (**UC-17**).
3. Press the **TRASH CAN icon** beside the download link URL to delete the bulletin PDF.
4. Send a DELETE request to the assigned API endpoint while passing the body parameters after pressing the TRASH CAN icon:
   - filename – bulletin PDF file name ex: "Camarines_Norte_Capalonga_10_day.pdf"
   - type – bulletin type (ten_day, seasonal, special)
5. Wait for the deletion process to finish.

Server PDF Bulletin File Deletion Process (API)

(Occurs in the NodeJS server)

1. Validate DELETE parameters.
   - Return an error response if there are invalid values.
2. Delete the Firestore document tagged with the PDF bulletin file from the database.

3. Delete the PDF bulletin from Firebase Cloud Storage.
4. Send a success/fail response back to the client website.

Option 2: Delete a PDF bulletin file (Overwrite)

1. *(Require **F-21**, **F-22**, or **F-23**)*
2. Create a new Seasonal Crop Recommendation Report (**F-21**), a 10-day Farm Weather Outlook and Advisory Report (**F-22**), or a Special Weather Bulletin Report (**F-23**)
3. Creating *(saving)* new crop recommendations, in essence, will **overwrite an existing bulletin PDF** (having the same input parameters, i.e., crop, province, municipality, rainfall forecast, and others) in the public PDF bulletins downloads page.

F-28: Phonebook management

Priority: Essential
Risk: Safe
Functional Areas:

- Phonebook contacts list management

Prerequisites: UC-19
Use case(s): UC-44, UC-45, UC-46, UC-47, UC-51, UC-52

Description

This feature allows signed-in Administrator users to view their contacts and to manually create, update, or delete contacts in their ACAP Phonebook.

Administrators can send SMS text recommendations (**UC-51**, **UC-52**) to contacts in their phonebook.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- React
- Express
- Nodejs
- Render

Features

- ACAP 1.0 REST API endpoints at:
  - GET /api/contact
  - GET /api/contacts
  - POST /api/contact
  - PATCH /api/contact
  - DELETE /api/contact
- Web user interface (UI) for managing the Phonebook contacts data

Workflow

View the Phonebook Contacts List

1. Sign-in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **SMS Management** tab.
   a. Fetch the Administrator's contacts list from the assigned API endpoint.
3. View the contacts list.

View Contact Details

1. View the Phonebook Contacts list.
2. Search for a contact name in the contacts SEARCH bar.
3. Click a contact name directly from the default list, or from the search results.
4. View the selected contact's details in the resulting ***"Contact Details"*** window.

Create a New Contact

1. View the Phonebook Contacts list.
2. Press the ADD CONTACT button.
3. Fill in the input details in the *"**Add Contact**"* window:
   - Enter a contact name.
   - Enter a Cell Number – Display an error message if the cell number already exists.
   - Press the SAVE button.
4. Send the input parameters as HTTP body request to the designated API endpoint on ***POST /api/contact***:
   - name
   - cellnumber
5. Wait for the create contact process to finish.
6. Server: Validate the input parameters.
   - Return an error response if there are invalid values.
7. Server: If there are no errors, *save* the input parameters as a new contact Firestore document in the database.

8. Server: Return a success/error response to the client website.
9. Wait for the create contact process to finish.

Update Contact

1. View a Contact Detail.
2. In the "***Contact Details"*** window:
    - Update the contact name.
    - Update the Cell Number -- Display an error message if the cell number already exists.
    - Press the SAVE button.
3. Send the input parameters as HTTP body request to the designated API endpoint on ***PATCH /api/contact***:
    - name
    - cellnumber
    - docId (existing contact document ID)
4. Wait for the create contact process to finish.
5. Server: Validate the input parameters.
    - Return an error response if there are invalid values.
6. Server: If there are no errors, *update* the contact Firestore document in the database (by docId) with the input parameters
7. Server: Return a success/error response to the client website.
8. Wait for the update contact process to finish.

Delete Contact

1. View a Contact Detail.
2. In the "***Contact Details"*** window:
    - Press the SAVE button.
3. Send the contact's document ID as HTTP body request to the designated API endpoint on ***DELETE /api/contact***:
    - docId
4. Wait for the delete contact process to finish.
5. Server: Validate the input parameters.
    - Return an error response if there are invalid values.
6. Server: If there are no errors, *delete* the contact Firestore document in the database (by docId)
7. Server: Return a success/error response to the client website.
8. Wait for the create contact process to finish.

F-29: View list of SMS recommendations

Priority: Esential
Risk: Safe
Functional Areas:

- SMS Management

Prerequisites: UC-19
Use case(s): UC-49

Description

The Crop Recommendations Reports List displays an overview summary of the *signed-in Administrator's* **SMS text Crop Recommendations,** which can be filterable by seasonal, 10-day, or severe cyclone weather recommendations type.

An SMS Crop Recommendation report contains the SMS text version and SMS sending logs of Crop Recommendation reports created at the time.

Note, however, that the SMS Crop Recommendations reports list is currently *not arranged in descending order by the latest created report date*. Administrators should search for a target SMS recommendation report by viewing its ***Date Created*** column in the table.

Alternatively, Administrators can view its Crop Recommendation counterpart in the ***Crop Recommendations Reports*** list (**F-24**, **UC-40**), showing items arranged in descending order by the ***Date Created*** column. Administrators can press the ***SMS button*** on a Crop Recommendation page's upper right beside the DELETE and BACK buttons to navigate directly to the SMS Crop Recommendation counterpart.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Website user interface (UI) for displaying the signed-in Administrator's SMS Crop Recommendations list

Workflow

1. Sign in as an Administrator at https://amia-cis.github.io/admin/login/.
2. Go to the **SMS Management** tab in the left sidebar menu.
3. View the list of *SMS Crop Recommendations reports* in a paginated table. The seasonal SMS crop recommendations are loaded first by default.
    - Fetch the signed-in user's *"seasonal"* crop recommendations list (which also contains the SMS text version)
4. Filter the SMS crop recommendations list by selecting a crop recommendation type in the "Bulletin Type" drop-down selectable options. Available options are:
    - Seasonal Crop Recommendations
    - 10-Day Crop Recommendations
    - Special Weather Recommendations
5. Fetch crop recommendations by the selected report type from **step #4.**
6. View the filtered SMS Crop Recommendations list.

Notes

- Administrators will see an empty SMS Crop Recommendations list if they have not yet created (SAVED) a seasonal, 10-day, or special weather crop recommendation report.

F-30: View SMS crop recommendation report

Priority: Esential
Risk: Safe
Functional Areas:

- SMS management

Prerequisites: UC-19, UC-49
Use case(s): UC-50

Description

This feature allows signed-in Administrators to **"view"** their *SM Crop Recommendation Report*, which contains the SMS text version and SMS sending logs of Crop Recommendation reports created at the time.

List of Technologies and Components

- Firestore database
- Firebase Authentication
- Firebase JavaScript SDK
- React

Features

- Website user interface (UI) for fetching and displaying the signed-in Administrator's Crop Recommendation Report (also contains the SMS text)

Workflow

View an SMS Crop Recommendation Report

1. *(Require **F-29**)*
2. Search for an SMS Crop Recommendation for viewing using the following options:
    - Search for an SMS Crop Recommendation Report by viewing the table's ***Date Created*** column.
        1. Click the SEND button of a row corresponding to an SMS Crop Recommendation Report for inspection.
    - Alternatively, head to the ***Crop Recommendations Reports*** list (**F-24**, **UC-40**) to view crop recommendation reports in descending order by the Date Created column.
        1. Manually search for a Crop Recommendation report by its ***Date Created*** column starting from the topmost row.
        2. Click on a Crop Recommendation row to view its contents.
        3. Press the SMS button on the upper right portion beside the DELETE and BACK buttons.
    - Another alternate option is to take note of the ***Crop Recommendation Report ID*** {id} from the previous step.
        1. Copy its value and paste it in the URL: https://amia-cis.github.io/admin/sms/viewSMS/?docId={id}
3. Fetch the Crop Recommendation Report document of a selected SMS report using any method from **step #2**.
4. Wait for the fetch process to finish.
5. View the SMS Report's contents on the resulting **SMS Crop Recommendation Report page** from **step #4**, displaying the ***"SMS Text form"*** and a list of Contacts from the Administrator's Phonebook.

View Logs of an SMS Recommendation

1. *(Require **F-29**)*
2. Search for an SMS Crop Recommendation Report by viewing the table's ***Date Created*** column.
3. Press the VIEW LOGS button.
    - SMS Crop Recommendation Reports will display an "UNSENT" text instead of a VIEW LOGS button if they haven't been sent as SMS text yet.

4. View the SMS logs from the resulting ***"SMS Recommendation Logs"*** window.

On-going, to add:

- F-31: Send SMS to Phonebook Contacts
- F-32: User Profile
- F-33: User Accounts Management
- F-34: System Initialization and Configuration
- F-35: PAGASA 10-Day Weather Forecast
- F-36: PAGASA El Nino / La Nina Forecast
- F-37: PAGASA Special Weather Forecast