

## Sensor Data

Airspeed:

Altitude:

Pitch:

Yaw:

Engine Information:

Current Time (UTC):

Data Last Updated:



## Management

Waypoints

Altitude

Min —

Max —

Speed

Min —

Max —

Time

Expected start —

Expected Arrival —

W1 W2 —

## Autopilot

Airspeed

Min —

Max —

Altitude

Min —

Max —

Pitch

Yaw

Engaged ☒

Disengaged ☒

Fault/ — ☒

## Console → Hazard Alerts

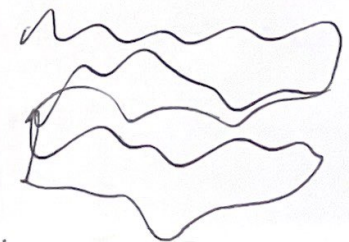
Hazard Warnings  
Checklist for emergency → Mitigation Actions  
Console

System Safe ☒

Sensor fault ☒

System unsafe ☒

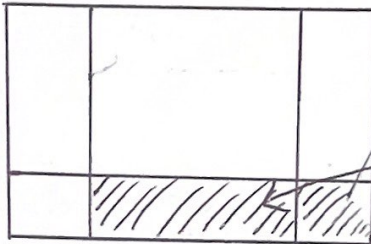
Mitigate ☒





# Hazard Alerts

- Dedicated section of the interface for hazard warnings and mitigation actions
- Audible and visual alerts for immediate hazards
- A checklist or action plan for emergency procedures



→ Visual Alerts for Hazards. Will deactivate once procedures have been completed

Hazard warnings and mitigation actions. Presents action plan to mitigate

|                       |  |
|-----------------------|--|
| No Hazards Identified |  |
| System Safe           |  |
| Sensor Fault          |  |
| Airspeed Fault        |  |
| Altitude Fault        |  |
| Altitude Fault        |  |
| System Fault          |  |
| Mitigate              |  |

## Safe State

This is how the console and hazard alerts section will present itself when it is safe

|                            |                |
|----------------------------|----------------|
| Error: Sensor and Airspeed | System Safe    |
| 1 ~~~~~                    | Sensor Fault   |
| 2 ~~~~~                    | Airspeed Fault |
| 3 ~~~~~                    | Altitude Fault |
| 4 ~~~~~                    | Altitude Fault |
| ...                        | System Fault   |
|                            | Mitigate       |

## Hazard/Mitigate State

This is how the console and hazard alerts section will present itself when the system is unsafe state.

|                 |                |
|-----------------|----------------|
| Error: Airspeed | System Safe    |
| 1 ~~~~~         | Sensor Fault   |
| 2 ~~~~~         | Airspeed Fault |
| 3 ~~~~~         | Altitude Fault |
| 4 ~~~~~         | Altitude Fault |
| ...             | System Fault   |
|                 | Mitigate       |

Once one hazard has been mitigated both console and hazard alerts will update to reflect that. IF another error is still present, Console will continue to provide procedure to mitigate. Once finished it will reflect back to Safe State.

## Sensor Data Display

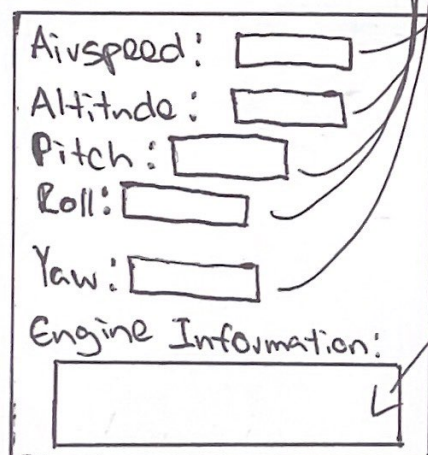
- Digital readouts for airspeed, altitude, pitch, roll, yaw & engine param.
- Visual indicators for data update frequency (e.g. colour change or blinking to indicate fresh data)



Display airspeed, altitude & attitude param

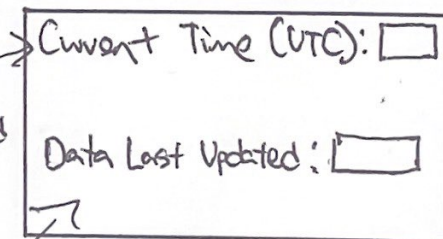
Implement button/light indicating that data/update frequency is efficient

Sensor will display necessary information regarding the system (sensors, speed, altitude)



Display information regarding engine thrust & fuel flow ??

Display current time.  
Data should be logged  
to this time

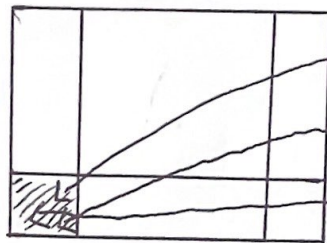


Last update time -> will issue warning if it is past set time



# Antopilot Control Panel

- Buttons to engage/disengage antopilot
- ~~Input fields for speed restrictions and~~  
Control & Manual Override: altitude adjustment, speed, heading
- Indicator lights for antopilot status (engaged, disengaged, fault cond.)

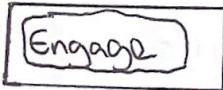


Buttons → engage, disengage, etc.

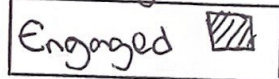
Lights to indicate antopilot status

Override/reset antopilot settings → reset values (speed, altitude) antopilot is operating

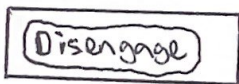
## 1. Press Button to Engage



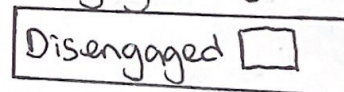
→ This will then reflect with the engaged light being turned on.



## 2. Press Button to Disengage



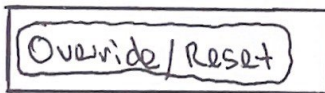
and disengaged light off:



Same as above just vice-versa

## 3. Override / Reset Button

- Antopilot will control plane based off data it is given as well as how it responds to sensors. We can override how it determines its altitude, airspeed & attitude by using override/reset button

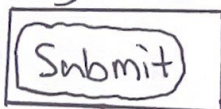


→ From here can specify new airspeed, altitude, attitude values

|          |   |
|----------|---|
| Airspeed |   |
| Min      | — |
| Max      | — |
| Altitude |   |
| Min      | — |
| Max      | — |
| Attitude |   |
| Min      | — |
| Max      | — |

Holy make this look better

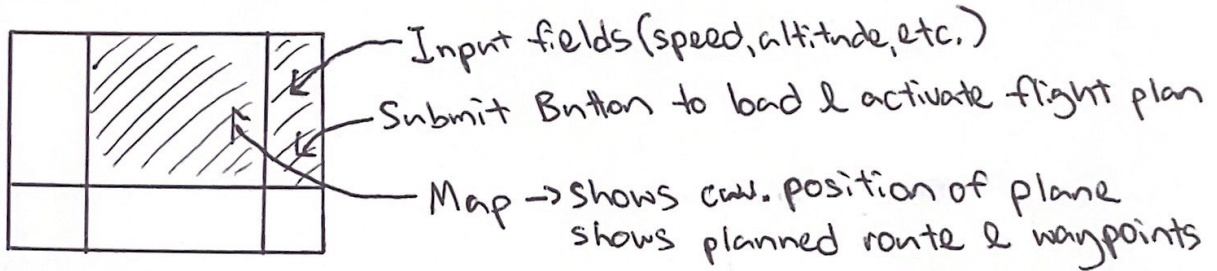
Then save new values using submit button



← - Should assume manual override will not disengage antopilot and instead keep its current state while modifying new flight plan.

# Flight Plan Management

- Input field for entering (latitude, longitude, altitude)
- Input fields for speed restrictions & expected times of arrival at each waypoint
- A submit button to load & activate flight plan
- Visual display (map) showing current position, planned route, and waypoints



## 1. Specify waypoints:

| WayPoints            |                      |                      |
|----------------------|----------------------|----------------------|
| Latitude             | Longitude            | Alt.                 |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

Specify values for each of Lat, Long. & Alt.

## 2. Airspeed & Time

| Speed (units?)       |                      |
|----------------------|----------------------|
| Min                  | Max                  |
| <input type="text"/> | <input type="text"/> |

Specify min & max airspeed

| Time                 |
|----------------------|
| Expected Arrival     |
| <input type="text"/> |

Specify expected time reaching location

## 3. Submit

|                                       |
|---------------------------------------|
| <input type="button" value="Submit"/> |
| <input type="button" value="Reset"/>  |

Create flight plan

• data should be checked (specified)

Modifications to flight plan ???

- option to correct specified data
- option to delete waypoint
- modifications checked also