CA400 Airport Assistant

User Manual

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Abstract:

Airport Assistant is an Android Application to help users, primarily those who suffer from anxiety, with dealing with passing through an airport. According to travelweekly.co.uk a study conducted by CPP found that one third of people find a working week to be less stressful that taking a flight and a quarter say it would be less stressful to move house than to take a flight. The purpose of this application is to take the stress out of air travel and make it more accessible to people who avoid travelling due to fear of the panic it will cause. Airport Assistant works by, instead of overloading users with information about the airport, bringing them through the process step by step, completing checks, giving advice and providing important information. It is almost like someone holding the user's hand and being their assistant throughout the journey.

The primary feature of the application is the AR (Augmented Reality) functionality for measuring luggage sizes. This will help ease the worries of users who are concerned that their hand luggage may not meet the requirements of there airline before the leave home. Similarly, features such as security tips and walk times to gates will help make the entire process less stressful.

0. Table of Contents

1. Introduction

Airport Assistant is an Android Application to help users, primarily those who suffer from anxiety, with dealing with passing through an airport. Throughout this document you will be guided through how to use this application. There is also a vast amount of additional content including how to handle errors, navigational features and other information important to the use of Airport Assistant.

The purpose of this application is to take the stress out of air travel. The purpose of this document is to guide you through the use of the application. Each stage of Airport Assistant will be clearly explained throughout this document. We will also delve into common features of each screen such as back buttons, progress bars and progress buttons.

2. Information for the use of the documentation

This document will guide you through the use of Airport Assistant. A table of contents has been provided to ease with the use of this document. For readers viewing this document electronically, there is a "Search capabilities" section at the end of the document which contains links to each section and subsection. The procedures section will guide you through the use of the application in a step-by-step manner from the beginning of the process to the end. If at any point you run into issues during this process, please consult "Error messages and problems resolution" to combat such issues.

If you are unfamiliar with any of the terms used throughout the document please consult the "Glossary" section. Here these terms will be clearly defined to aid you in the use of the application. If at any point you require assistance with the navigation of the application, please consult the "Navigation features" section of this document.

3. Concept of Operations

The primary function of this application is to guide a user through the process of passing through the airport. Each stage of this application is dedicated to a step in this process. These steps include:
- Install the application
- Login to the application
- Upload a journey
- Check-in decision
- Confirm journey
- Measure hand luggage (AR)
- Directions to airport

- ○ Check-in
- ○ Security
- ○ Duty free map
- ○ Directions to gate
- ○ Inflight information
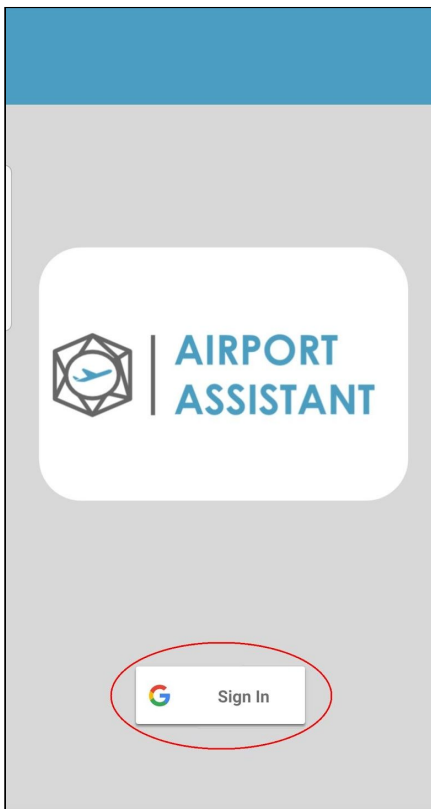- ○ Directions to destination

4. Procedures

● Installation

Goal of this step: To install the application.

- ○ To install the Airport Assistant application go to the Google Play Store and search for "Airport Assistant"
- ○ Click on the Airport Assistant application
- ○ Click the install button
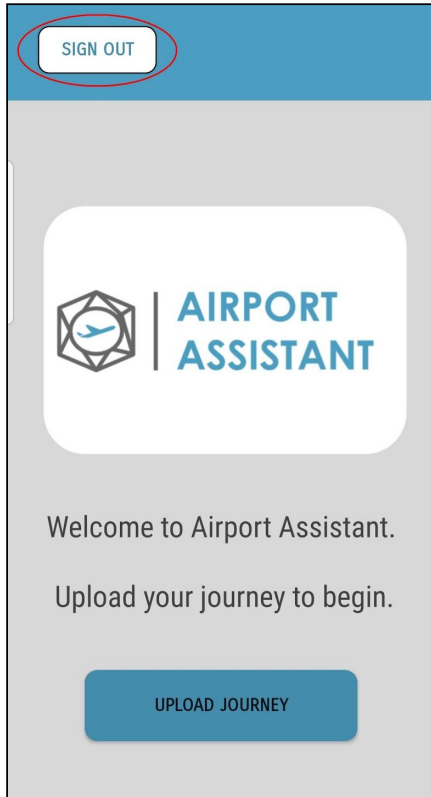- ○ Once the application has installed click the open button on this page

● Login

Goal of this step: To login to the application.

- ● When you open the Airport Assistant application you will be presented with the login screen

- ● Click on the "Google Sign in" button

- ● You will be presented with the Google Sign in page

- ● Select an account to sign in with and enter your Google password

- ● You are now signed into the Airport Assistant application

● Logout

Goal of this step: To logout to the application.

● Click the "Logout" button on the top left hand hand corner of the home screen

● The user is now logged out of Airport Assistant

● Upload Journey

Goal of this step: To upload a journey to the application.

● To upload a journey, firstly click the "Upload Journey" button

● You will then be asked to enter your flight number

● Enter your flight number here

● Click the "Upload Journey" button

● If you do not enter a value here you will be prompted that a flight number is required

- **Check-In Weight**

  Goal of this step: To select whether the you wish to check-in luggage or not. If you do wish to check-in luggage, these values will be entered into the application here.

If you are checking in luggage….

- Click yes on the "Will you be checking in hold luggage" option

- Enter the weight you have booked to check-in in the first field

- Weigh your luggage

- Enter the actual weight of your baggage in the second field

- Click the "Begin Journey" button

If you are not checking in luggage….

- Click no on the "Will you be checking in hold luggage" option

- Click the "Begin Journey" button

- **Confirm Journey**

Goal of this step: To confirm that the details of the journey are correct so that you may begin your journey.
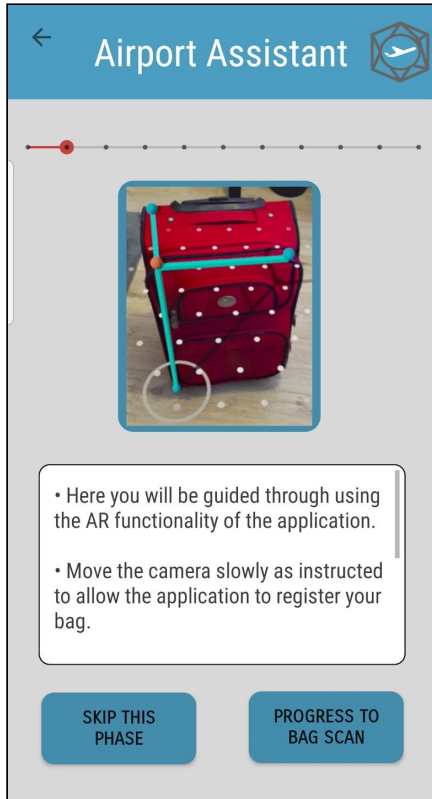

- Your flight number, airline, destination and flight time will be displayed on this screen

- If these details are correct
  - Click the "Start Journey" button

- If these details are incorrect
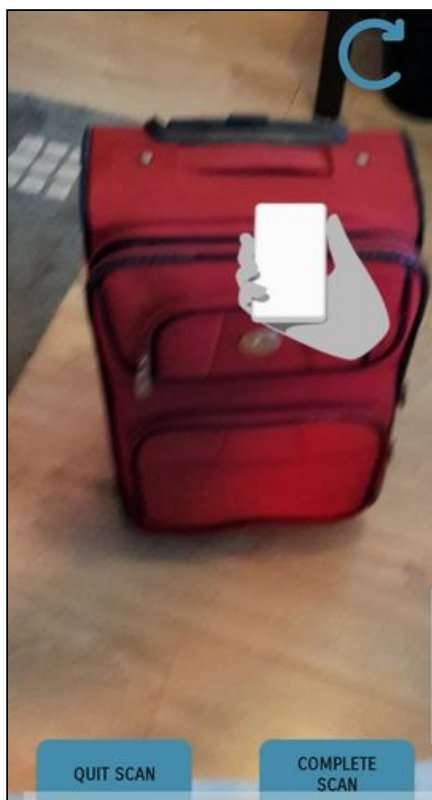 - Click the "Cancel" button

- **AR**

  Goal of this step: To measure your hand luggage and confirm it is of the correct dimensions.

AR Tutorial Screen

- You will initially be presented with the AR tutorial screen

- Here you will see an image depicting how to use the AR functionality of the application.

- Below this there are a number of steps which will be explained in further detail here

- If you wish to make use of this functionality
  - Click the "Progress to Bag Scan" button

- If you do not wish to use it
  - Click the "Skip this Phase" button
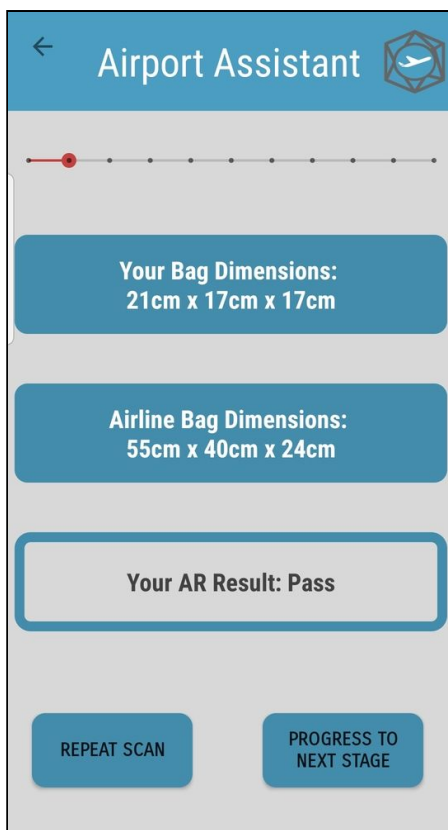
AR Camera Screen

- Once you open the AR screen you will be guided by a white hand on the screen.
  - Follow this hand and move your device slowly in a circular motion.
  - Continue this until you can see the planes being mapped on your screen.

- Hold your device facing your bag you wish to measure.

- Once your device has picked up your bag, you will begin mapping points.

- Firstly, place the red point on the front left top corner of the suitcase. This will act as your base point.

- We will then place the remaining three points

- These can be placed in any order but must be placed on the
    - bottom left
    - back left
    - front top right corners of the bag as seen in the diagram.

- Once you are happy with how these points have been placed
    - Click the "Complete Scan" button

- If at any stage you wish to not continue with this process
    - Click the "Quit Scan" button
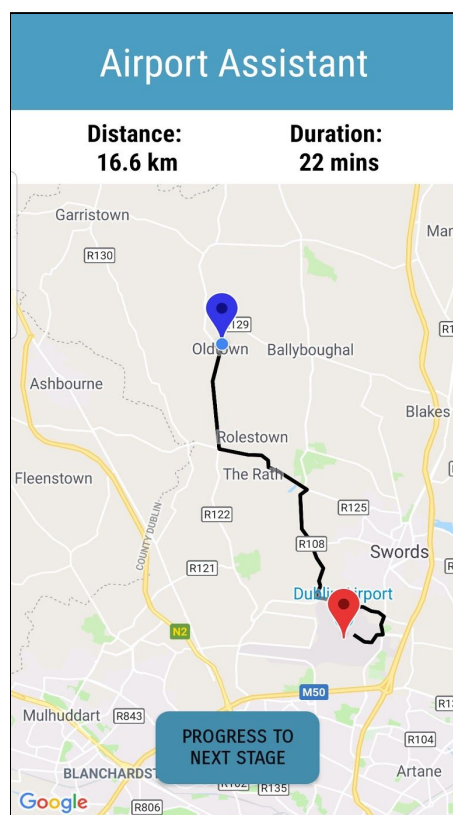
AR Results Screen

- Here you will be presented with your bag's dimensions, your airline's allowed dimensions and your AR pass/fail result

- If you wish to repeat this scan or scan a different bag
    - Click the "Repeat Scan" button

- If you are happy to continue
    - Click the "Complete Scan" button progress with the application

● **Directions to Airport**

Goal of this step: To direct you to the airport successfully.

- Firstly select whether you would like to receive directions for your mode of transport or not
  - If you select yes, a new field will become visible
  - If you select no, this field will not become visible

- Then select the mode of transport you will be using
  - If you do not select a mode of transport you will be prompted to enter a mode of transport.
  - If you do not select whether you would like directions or not you will be prompted to select an option for this

- Click the "Progress to Next Stage" button

● Check-In

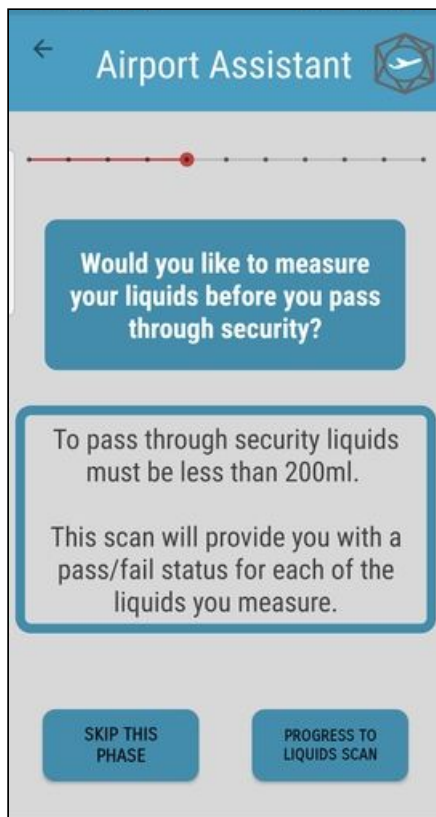*Goal of this step: To guide you through the process of checking in.*

- You will be presented with this screen if you are checking in luggage

- Your flight number, destination, airline and flight time will be displayed here

- Check the check-in board in the airport for this information

- Here you will find your check-in gate

- This page also informs you of your booked weight and the actual weight of your page

- Here you can be at ease knowing you are below your maximum weight

- There is also a link found here to Dublin Airport Authority's (DAA) website which provides helpful hints on checking in luggage

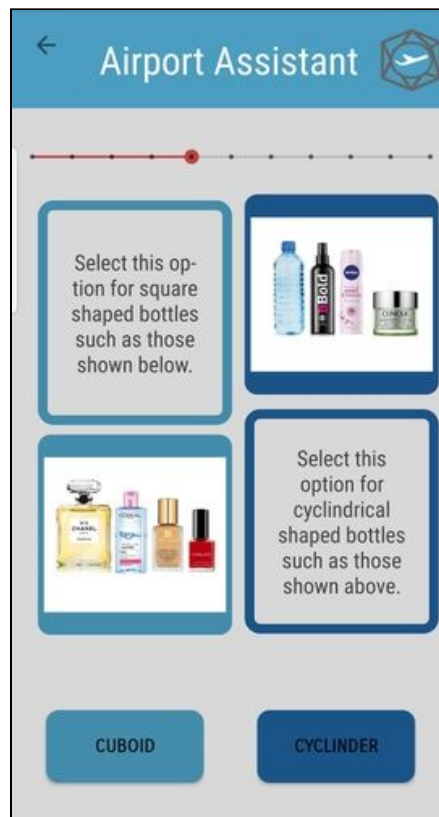- To progress click the "Progress to Next Stage" button

- **Security**

  Goal of this step: To assist you with passing through security in the airport.
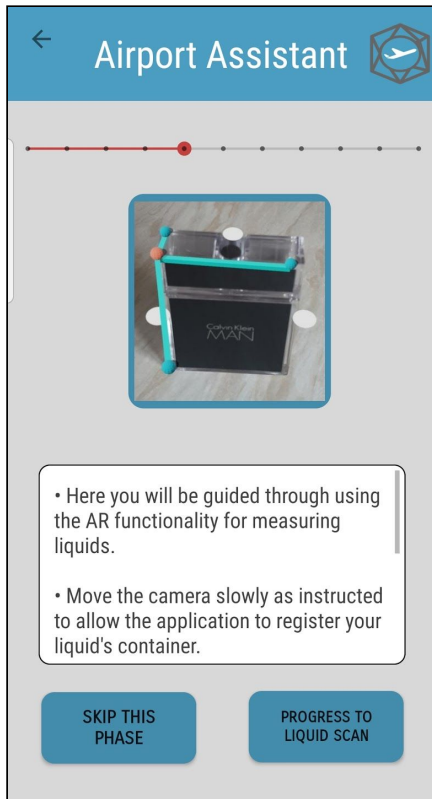
AR Security Check

AR Shape Check

- Here we will be asked if you would like to use the AR functionality of the application to measure your liquids.

- This scan will measure to check if your liquids are below 200ml, which is the maximum size that is required to pass through security.

- If you wish to scan your liquids
  - Click the "Progress to Liquids Scan" button

- If you wish to skip scanning your liquids
  - Click the "Skip the Phase" button

- You then must select whether you are scanning a cuboid shaped or cylindrical shaped object.

- You have been provided with images of examples that fit each shape type

- If you wish to scan a cylindrical shaped object

- ○ Click "Cylinder"

- If you wish to scan a cuboid shaped object
  - ○ Click "Cuboid"
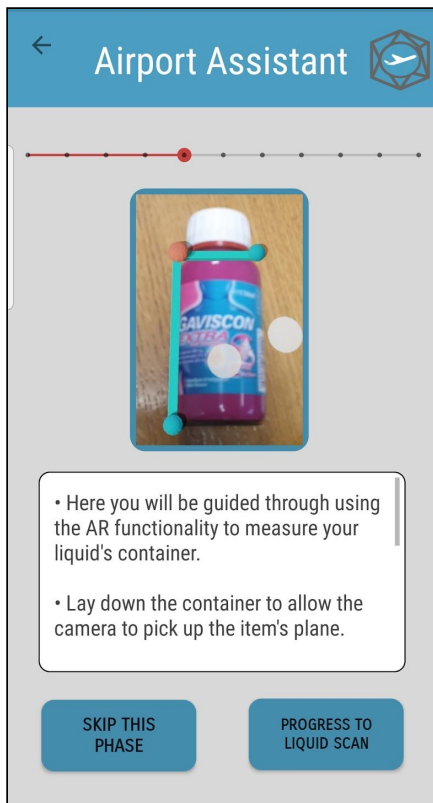
AR Cuboid Guide

- Firstly you will see the AR Cuboid Guide

- This guide will provide a number of steps on how to complete the scan.

- If you wish to continue with this scan
  - ○ Click the "Progress to liquid scan" button

- If you wish to skip this scan
  - ○ Click the "Skip this phase" button

AR Cuboid Scan

- Move the camera slowly as instructed to allow the application to register your liquid's container.

- You will now place four coloured balls on your container.

- Place the red ball in the top left corner as shown above.

- Place the remaining three blue coloured balls on the bottom left, top right and back left points as shown above"
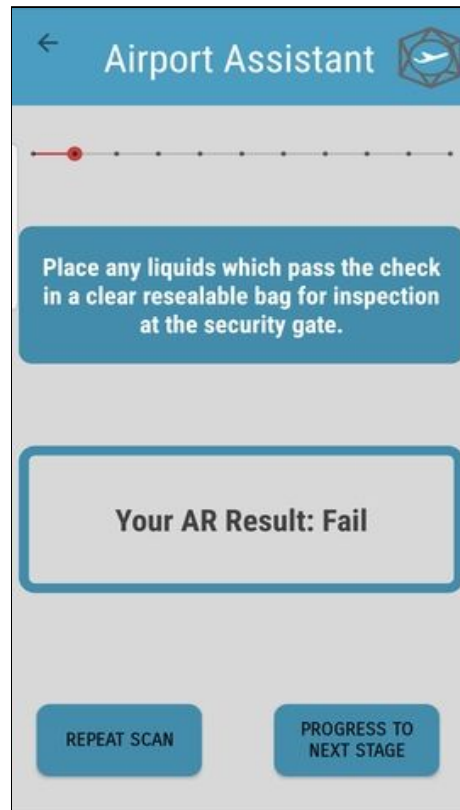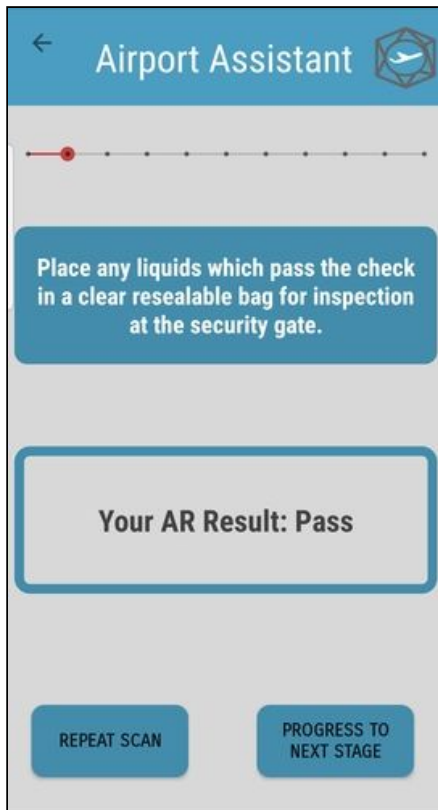
AR Cylinder Guide

- Firstly you will see the AR Cylinder Guide

- This guide will provide a number of steps on how to complete the scan.

- If you wish to continue with this scan
  - Click the "Progress to liquid scan" button

- If you wish to skip this scan
  - Click the "Skip this phase" button

AR Cylinder Scan

- Lay down the container to allow the camera to pick up the item's plane

- Move the camera slowly as instructed to allow the application to register your container.

- Place the red ball on the top left corner as shown above.

- Place your first blue ball on the front top right corner of the container.

- Place your second blue ball on the front bottom left corner of the container.
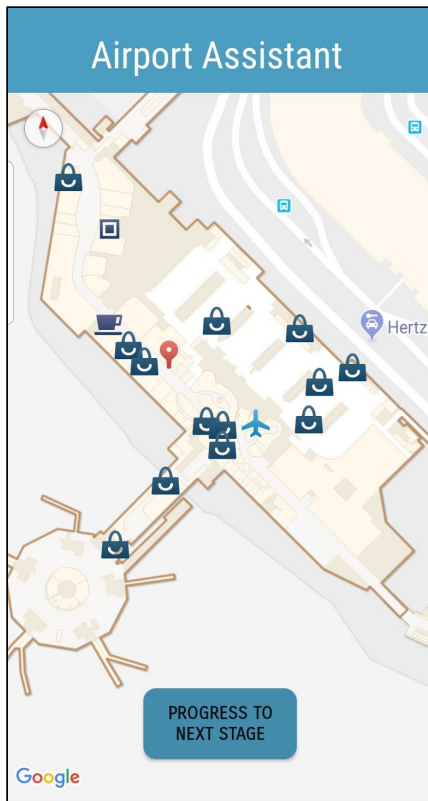
- Click the "Complete scan" button

- When you complete your scan you will be presented with either a pass or fail result.

- If you wish to repeat the scan
  - Click "Repeat scan"

- If you wish to progress to the next stage of the application
  - Click "Progress to next stage"

- At the top of the screen you will see how long the security wait time currently is

- Below this is a scroll menu with helpful tips for passing through security provided by DAA
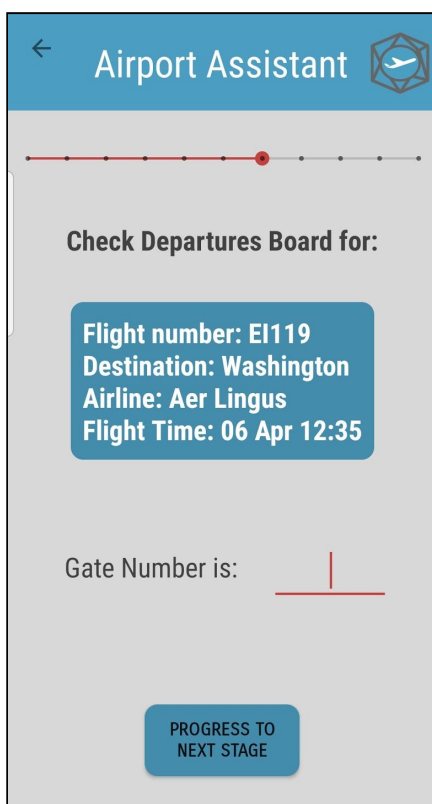
- **Duty Free**

  Goal of this step: To display you the different amenities present in duty free.

- Here you are provided information on what amenities are near you

- You can see a map of Dublin Airport Duty Free
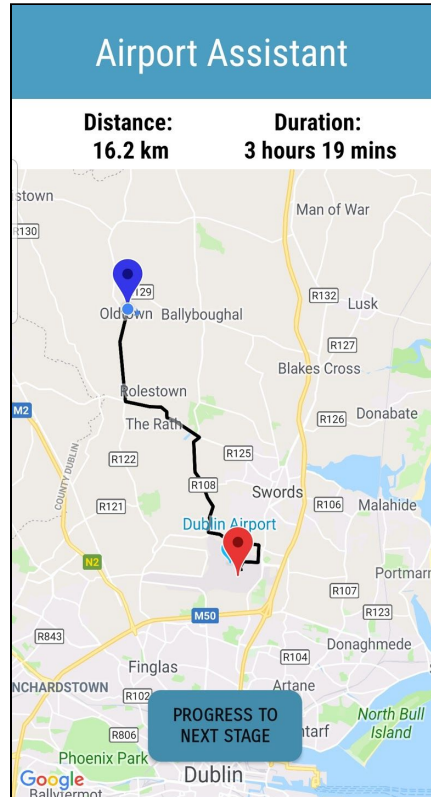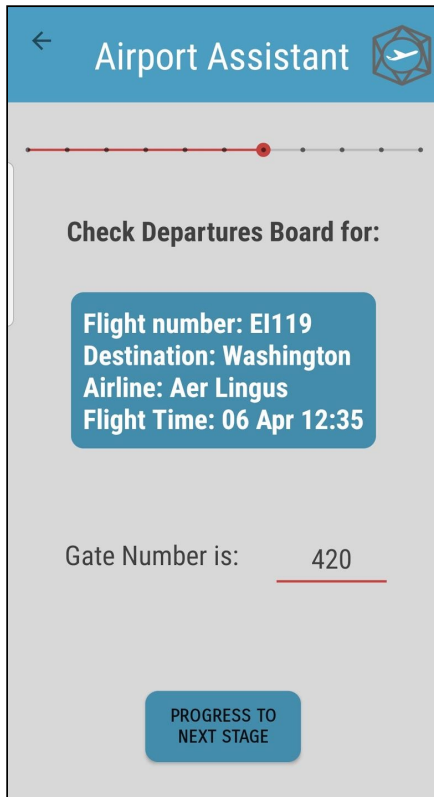 - Tap on an icon to be provided with information about the location

- **Directions to Gate**

  Goal of this step: To guide you to your departure gate.
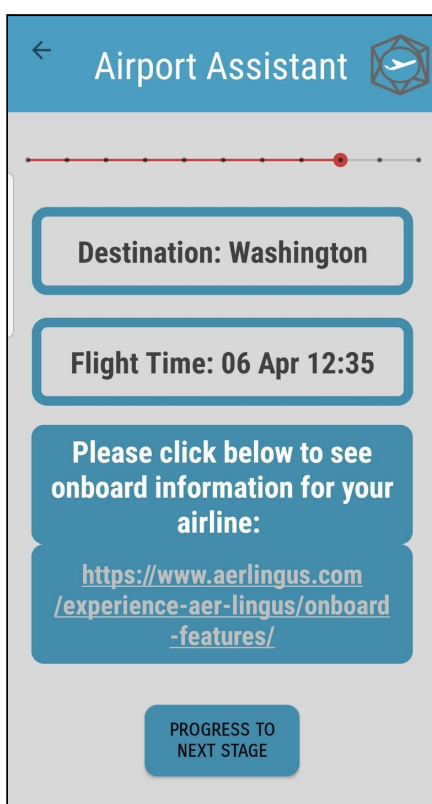

- Your flight number, airline, destination and flight time will be displayed on this screen

- You will be asked to input your gate number here

- This can be found on the departures boards within the airport

- Once you enter your gate number click the "Progress to Next Stage" button

- This screen will direct you to your gate

- Follow these directions until you arrive at your gate

- Then click the "Progress to Next Stage" button

- **Inflight Information**

  Goal of this step: To put you at ease throughout your flight by displaying you with your airline's specific onboard information.
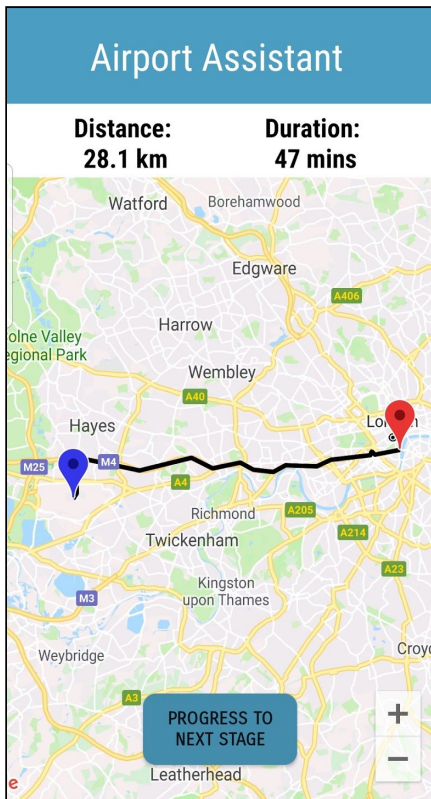

- On this screen you are provided with your flight destination and time

- Below you will see a url, this is a link to your airline's onboard information

- Here you can find information relating to onboard meals, entertainment and shopping information

● **Directions to Destination**

Goal of this step: To direct you to your destination.

- When you have arrived at your destination airport you will be presented with this screen

- Firstly select whether you would like to receive directions for your mode of transport or not
  - If you select yes, a new field will become visible
  - If you select no, this field will not become visible

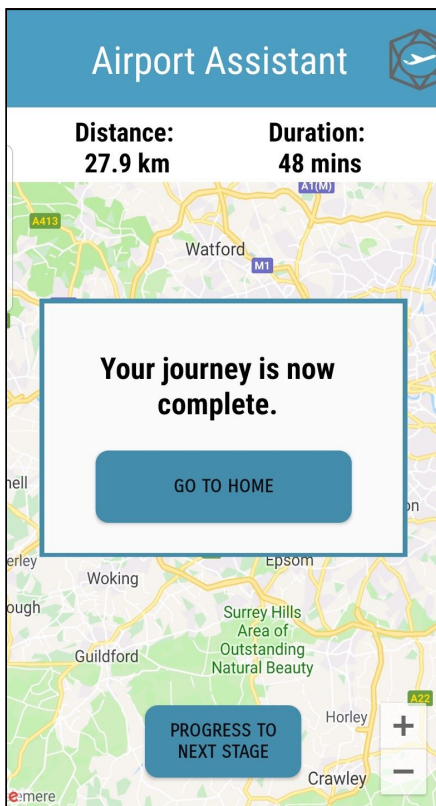- Select the mode of transport you will be using

- Then you enter the name of where you are travelling to

- Select the mode of transport you will be using

- If you do not select a mode of transport you will be prompted to enter a mode of transport.

- If you do not select whether you would like directions or not you will be prompted to select an option for this

- Click the "Progress to Next Stage" button

- The next screen will direct you to your destination

- Follow these directions to your accommodation
- Once you have arrived click the "Journey Complete" button
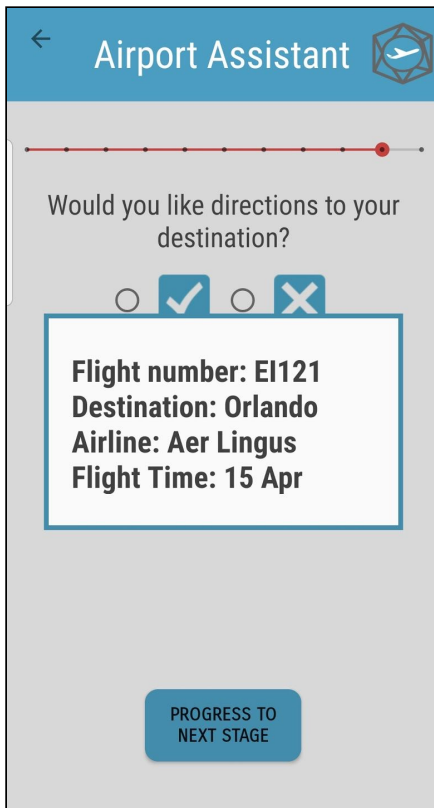
- **Journey Complete**

Goal of this step: To inform you that your journey is now complete.

- You will receive a pop up to let you know that the journey is now complete

- You will then progress to the home page

- Congrats you have completed your journey

● **Journey Information Button**

Goal of this step: To keep users informed about their journey.

- Once you have began your journey you can click the logo button on the top right hand corner of the screen

- This will provide you with a pop up of your journey details

- To remove this from your screen just tap the screen again

5. Error messages and problem resolution

- **Not entering fields**
  - **Error**
    If you fail to fill in a field you will receive a pop up which alerts you to fill in this field.
  - **Resolution**
    Fill in the required field with the necessary information

- **Not selecting Radio Buttons**
  - **Error**
    If you fail to select a radio option you will receive an error which alerts you to select a radio button.
  - **Resolution**
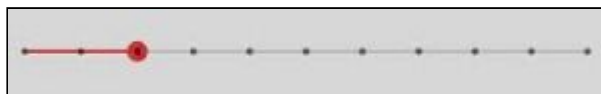   Select the radio option you wish to progress with.

6. Glossary

- ○ **AR**
  Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real-world are "augmented" by computer-generated perceptual information.
- ○ **Accessible**
  Easy to approach, reach, enter, speak with, or use.
- ○ **Integration**
  The act of combining or adding parts to make a unified whole.
- ○ **Duty Free**
  Duty-free shops (or stores) are retail outlets that are exempt from the payment of certain local or national taxes and duties, on the requirement that the goods sold will be sold to travelers who will take them out of the country.
- ○ **Check-in**
  The check-in process at airports enables passengers to check in luggage onto a plane.
- ○ **Airport Security**
  Airport security refers to the techniques and methods used in an attempt to protect passengers, staff, aircraft, and airport property from accidental/malicious harm, crime, and other threats.

7. Navigational features

Progress Bar
Once you have began a journey you will see a progress bar on the top of your screen. This will keep you informed as to what stage of your journey you are currently at.

Progress to Next Stage button
The progress to next stage button is a constant throughout the application. This will bring you from your current screen to the next.

Back button
This button is used to return to your previous screen.

8. Search capability