<Team 000000000111>

<Airport Map>

Use Case Report

Revision History

Authors	Description of Change	Sections	Rev	Date

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1   Team Description

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2   Project Description

Statement of Purpose: The purpose of this project is to create a map of US airports that would allow airlines to create paths between two airports.

Detailed Description: FAA will set up the information for airline about airport and edges.It will look like the following drawing.
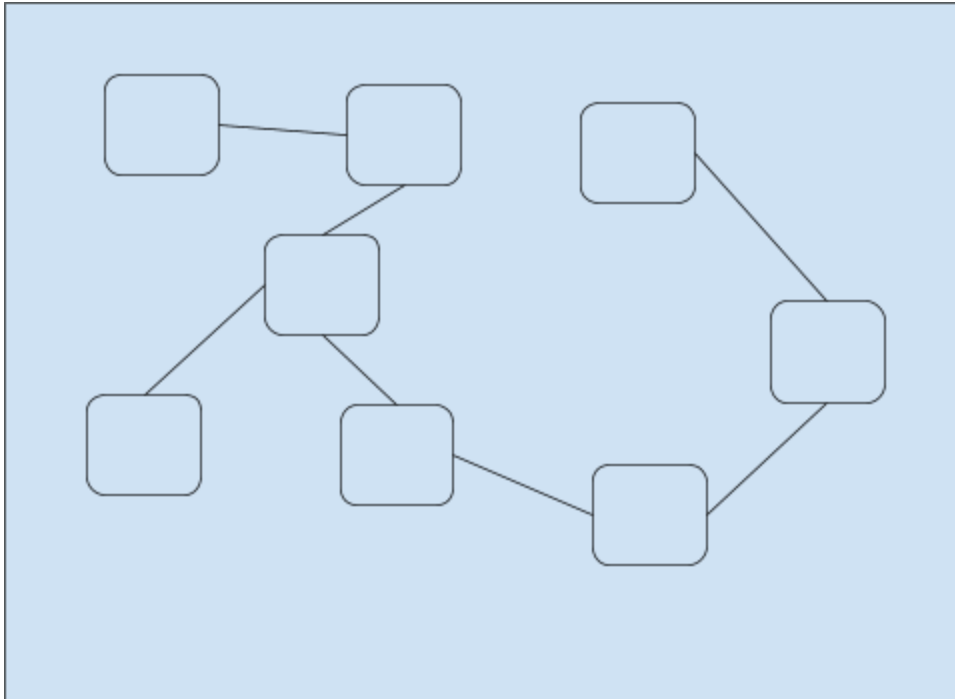
The airline will make a starting point and ending point for the path. The system will make the shortest path for the airline. However, FAA can disable and cancel the edges and airport.Therefore some paths will be disabled. Now, system will make a new path for the airline. Airline can cancel the path or accept the path. The path for the airline will displayed in a linear text line, with the starting airport being at the start of the line with each airport that the plane traversed being printed in order of when the plane visited said airport.

Each line between two airports are called an edge, and the set of edges that connect a starting point and ending point is called a path.

2.1   Use Case Diagram
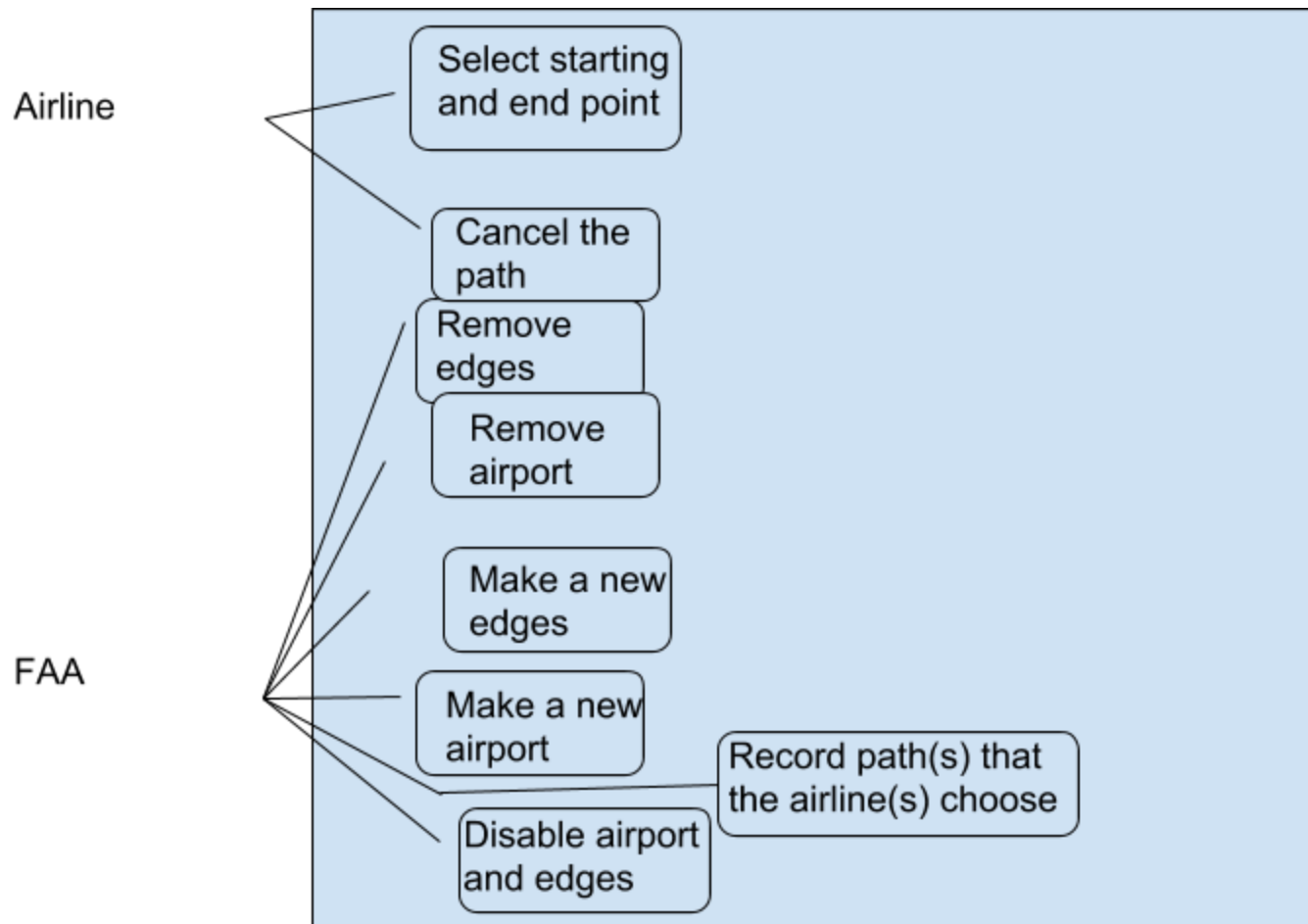
2.2 Use Case List

Use Case		
Sequence Number	**Actor**	**Goal**
1	Airline	Select starting and end point

2	Airline	Cancel Path
3	FAA	Record path(s) that the airline(s) choose
4	FAA	Create edge
5	FAA	Create airport
6	FAA	Remove edge
7	FAA	Remove airport
8	FAA	Disable airport
9	FAA	Disable edge

2.2.1 Airline Use Case

Primary Actor:Airline

Secondary Actors(s): FAA

Goal in Context: Airline will make a starting point and end point to make a flight pass. FAA will set up the airport and edge between the airport.Also, FAA will control the airport and edges which means they can cancel or disable those airport and edges.

Preconditions: All information will be set up by FAA.

Additional Description: The total distance between the starting point and the ending point (including airports in-between the start and end points) will be calculated by the system to provide the shortest path the airline can take. An edge leading directly from the start point to the end point will be prioritized first. Paths separating the start and end points by one or more airports will be used in the event that a direct edge is unavailable to be made between the two points.

2.2.1.1   Airline selects start and end point of the path.
From the map the Airline will select the start and end point.
2.2.1.1.1   The system then displays the possible path choices starting with the shortest path. The Airline can then save the path of choice.
2.2.1.1.2   If there are no possible paths the user will be alerted

2.2.1.2   Airline chooses to cancel a saved flight path
The airline can look at current flight paths and choose to delete one. Saved path is deleted. Other flight options are calculated and displayed.

2.2.1.2.1   In the case of an airport or edge is disabled along a saved path the airline will be alerted and given the option to choose a new path.

2.2.1.3   Airline chooses to save path.

The airline will select a flight path and save it with departure time.

2.2.2   FAA Use Case

Primary Actor: FAA

Secondary Actors(s): Airline

Goal in Context: To manage flight map.

Preconditions: All information is gathered from real life data.

Additional Description:

2.2.2.1   FAA creates airport

The FAA will input coordinates for new airports

2.2.2.1.1   The coordinate is accepted and the airline is added to the map

2.2.2.1.2   The coordinate is outside of the U.S. and an error message is displayed.

2.2.2.1.3   The coordinate is already in use and an error message is displayed.

2.2.2.2   FAA creates edges

The FAA will select the connecting airports to add an edge

2.2.2.2.1   The edge do not already exist and is now added to the map

2.2.2.2.2   The edge does already exist and an error message is displayed

2.2.2.3   FAA removes airport

The FAA will select an airport to delete. The system will also delete edges connected to this airport. Before deletion the system will check if deleting any of the edges will lead to an abandoned airport. (Abandoned Airport- an airport without any edges)

2.2.2.3.1   No abandoned airports will be created by deletions, so the the airport and edges are deleted

2.2.2.3.2   Deletion will result in an abandoned airport, so a warning message is shown [Delete anyway? Yes/No]

2.2.2.3.2.1   No selected: System will not delete

2.2.2.3.2.2   Yes selected: The airports and edges are deleted and a message will ask if the abandoned airport is to be deleted

2.2.2.4   FAA removes edge

The FAA will select an edge to delete. The system will check if the deletion will result in an abandoned airport. (Abandoned Airport- an airport without any edges)

2.2.2.4.1   The airports connected by this edge will still have other edges so the selected edge is deleted

2.2.2.4.2   At least one of the airports connected by the edge will be left without any edges, so a warning message is displayed showing that there will be no possible flights to or from the airport.