



Air Traffic Controller

*Submitted in partial fulfilment of the requirements for Object Oriented Modelling & Design
during 7th semester of*

Bachelor of Technology in Computer Science & Engineering

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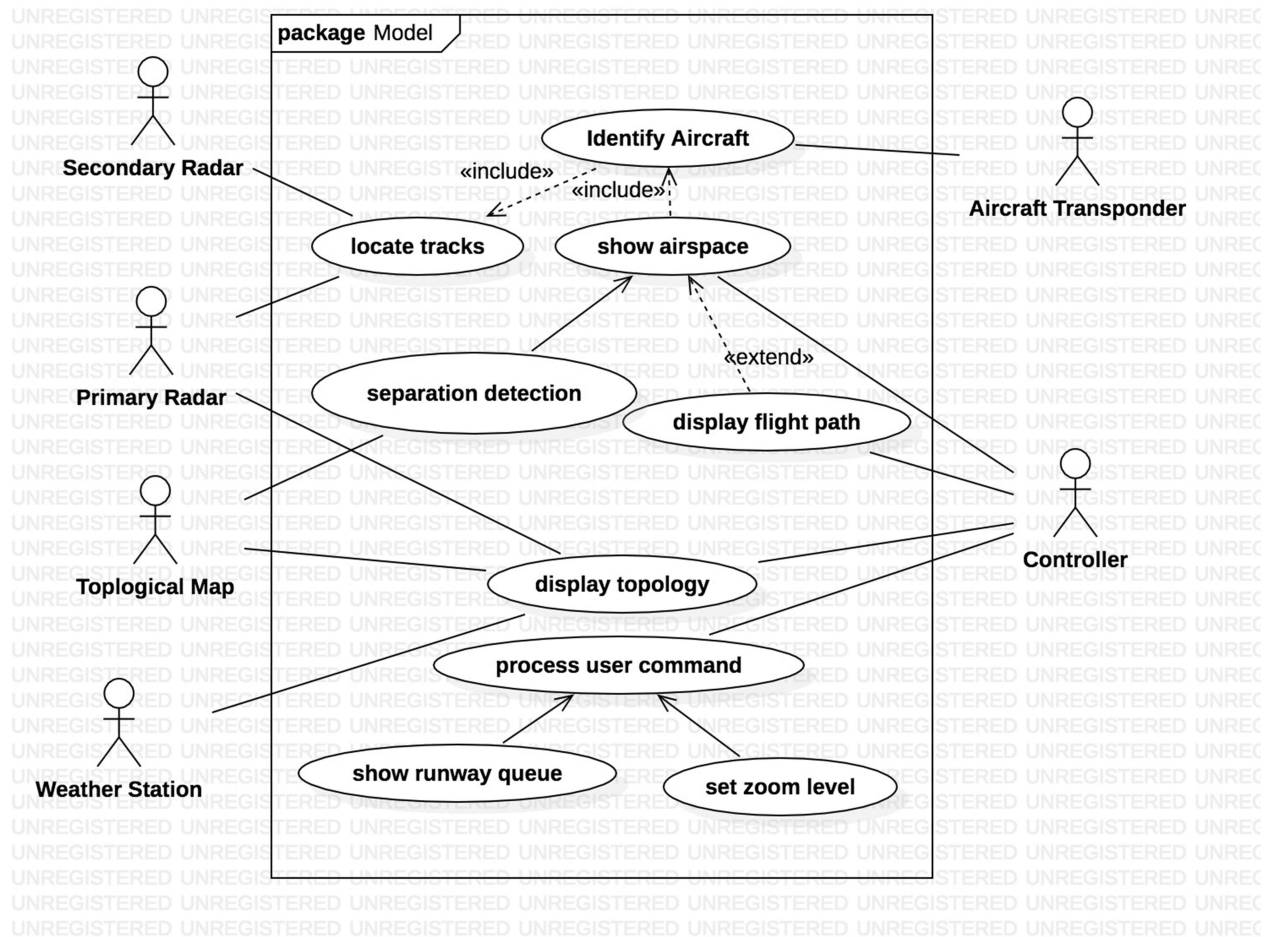
2019

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
FACULTY OF ENGINEERING
PES UNIVERSITY**

**(Established under Karnataka Act No. 16 of 2013)
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Air Traffic Controller

Use Case Diagram



Use Case	Description
Name	Identify Aircraft
Summary	<p>This module helps to identify a specific aircraft. The following things get recorded for the aircraft:</p> <ul style="list-style-type: none"> • Airline name and flight number • Type of aircraft and equipment
Primary Actor	Aircraft Transponder
Precondition	Transponder starts sending signal to Air Traffic Control.
Postcondition	<p>Aircraft gets registered in Air Traffic Control system.</p> <p>Primary and Secondary Radar tries to locate the track.</p> <p>Aircraft awaits Controller's instruction for its designated airspace.</p>
Exception	<p>Transponder lose signal</p> <p>Communication failure between Aircraft and Controller</p>

Use Case	Description
Name	Locate Tracks
Summary	This module helps to track the aircraft with the help of Primary and Secondary Radar
Primary Actor	Primary Radar, Secondary Radar
Precondition	The aircraft gets registered in Air Traffic Control System
Postcondition	<p>Primary Radar detects and measures the approximate position of aircraft using reflected radio signals.</p> <p>Transponder automatically transmit unique 4 digit code when they receive the radio signal.</p> <p>Secondary Radar gets the identity and altitude of the aircraft.</p> <p>All the flight data gets relayed to the Controller.</p> <p>Aircraft awaits to get its airspace.</p>
Exception	<p>Communication failure</p> <p>Wrong identity or altitude</p>

Use Case	Description
Name	Show Airspace
Summary	This module helps the Controller to verify the airspace for the aircraft. He verifies that no other aircraft is in that airspace in that particular time.
Primary Actor	Controller
Precondition	Aircraft gets registered and all flight data as altitude, speed etc gets relayed to the Controller Controller logged in the system Separation detection by topological map
Postcondition	The aircraft has been provided the requested airspace. It awaits for the display of flight path
Exception	Communication failure Separation detection failure

Use Case	Description
Name	Separation Detection
Summary	This module helps to provide necessary separation from the other aircraft in the vicinity through topological map and the trajectory of the aircraft
Primary Actor	Topological Map
Precondition	Aircraft gets registered and all flight data as altitude, speed etc gets relayed to the Controller
Postcondition	Separation detection done through topological map The aircraft has been provided the requested airspace. It awaits for the display of flight path
Exception	Communication failure Availability of other aircraft near to the airspace

Use Case	Description
Name	Display Flightpath
Summary	This module helps the controller to display the flight path specifically altitude profile for the aircraft
Primary Actor	Controller
Precondition	Aircraft gets registered and all flight data as altitude, speed etc gets relayed to the Controller Separation detection done through topological map The aircraft has been provided the requested airspace
Postcondition	The aircraft gets its intended flight path
Exception	Communication failure

Use Case	Description
Name	Display Topology
Summary	This module helps the Controller to send the altitude profile, present weather condition, visibility status to the aircraft.
Primary Actor	Controller, Primary Radar, Topological Map, Weather Station
Precondition	The aircraft has been provided the requested airspace The aircraft gets its intended flight path Separation detection done
Postcondition	Aircraft gets all information related to the altitude, weather status, visibility condition
Exception	Communication failure

Use Case	Description
Name	Show Runway Queue
Summary	This module helps the Controller to show the already arrived aircraft present in the runway
Primary Actor	Controller
Precondition	The aircraft has been provided the requested airspace The aircraft gets its intended flight path The aircraft gets all the topological data
Postcondition	The aircraft gets the proper picture of the runway
Exception	Communication failure

Use Case	Description
Name	Set Zoom Level
Summary	This module helps the Controller to set proper zoom level for better understanding of the pilot for his successful landing
Primary Actor	Controller
Precondition	The aircraft has been provided the requested airspace The aircraft gets its intended flight path The aircraft gets all the topological data
Postcondition	The aircraft gets the proper picture of the runway
Exception	Communication failure

Use Case	Description
Name	Process User Command
Summary	This module helps the Controller to process the aircraft pilot request for landing
Primary Actor	Controller
Precondition	<p>The aircraft has been provided the requested airspace</p> <p>The aircraft gets its intended flight path</p> <p>The aircraft gets all the topological data</p> <p>The aircraft gets the traffic condition of the runway and zoom level set</p>
Postcondition	The Controller gives permission for landing or instruct to wait the pilot until the runway gets cleared or favorable weather condition prevails
Exception	Communication failure