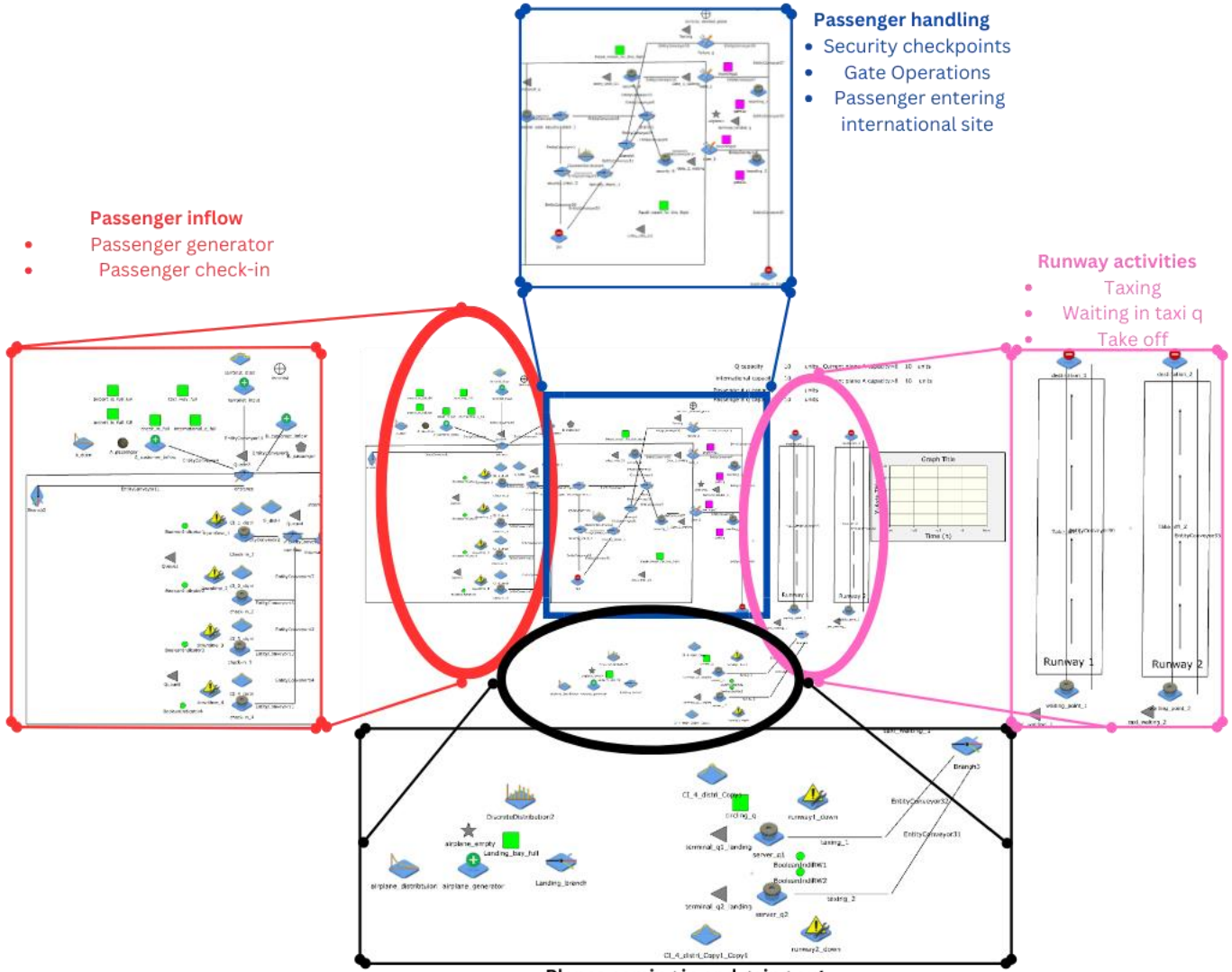


Planes coming in and going out

- simulate planes coming in
- simulate planes circulating around airport
- simulate planes landing

Queuing for gate activities

- planes need to que before they can service the passengers
- plane need to go to the service part of the terminal before they can board the passenger

Taxi way, planes that are in the line to take off

This ensures that the Qs for Gates A and B are not too full. If so, the airport will close till the Q is cleared

Check-In Qs, if the check in Qs is full your airport has hit its capacity

If the international Q is full you cannot enter the airport, too many people

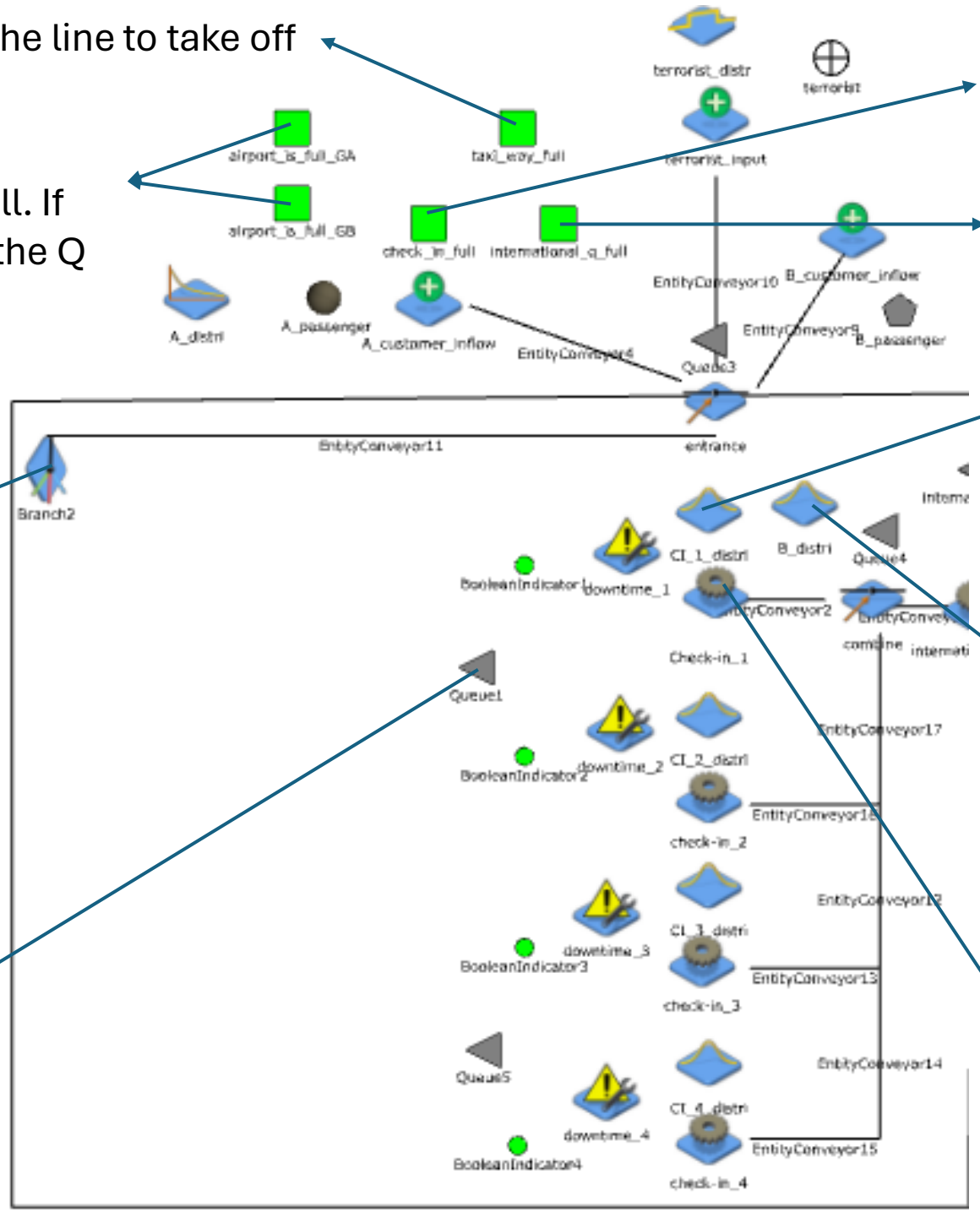
Distribution for the check-in to be down, either change of shift or machine is down

Branch2, distributes the people to the shortest Queue

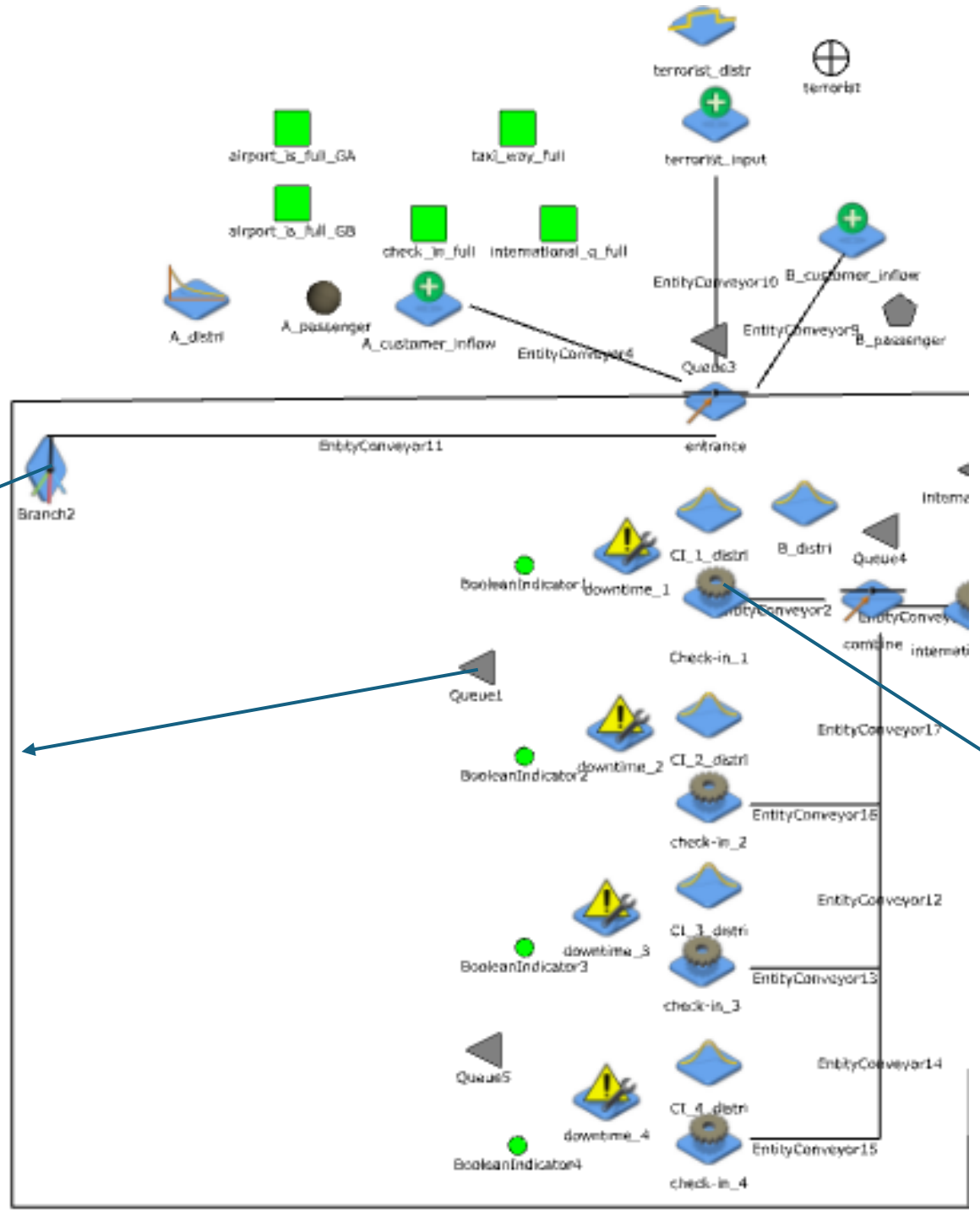
B_distri, is the distribution for the rate of which customers are cleared

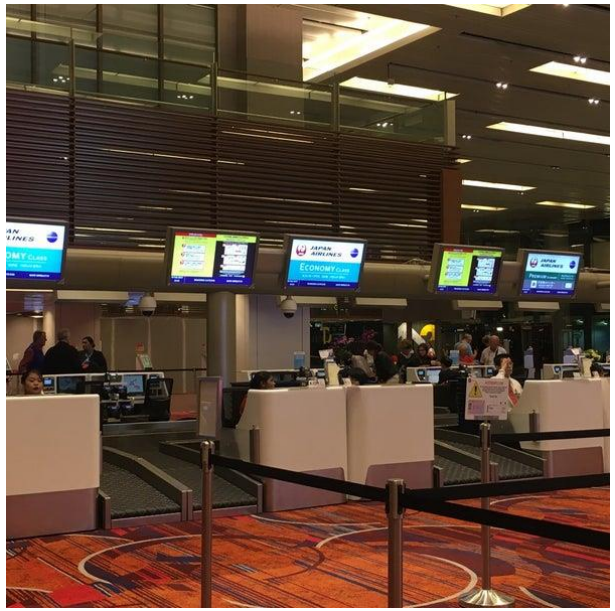
Q1 services check-in counters 1 and 2, like a real airport, you have 1 q but multiple counters

This are the check in counters to check in the customers




SINGAPORE
CHANGI AIRPORT TERMINAL 1


terrorist_distr
terrorist
airport_is_full_GA
taxi_way_full
terrorist_input
airport_is_full_GB
check_in_full
international_q_full
EntityConveyor10
B_customer_inflow
A_distri
A_passenger
A_customer_inflow
EntityConveyor4
EntityConveyor9
B_passenger
Queue3
entrance
EntityConveyor11
Branch2
CI_1_distri
B_distri
Queue4
BooleanIndicator1
downtime_1
EntityConveyor2
Check-in_1
Queue1
downtime_2
CI_2_distri
EntityConveyor17
BooleanIndicator2
EntityConveyor16
check-in_2
EntityConveyor12
BooleanIndicator3
EntityConveyor13
check-in_3
Queue5
EntityConveyor14
downtime_4
BooleanIndicator4
EntityConveyor15
check-in_4



Queue to enter the security A

Security checkpoint

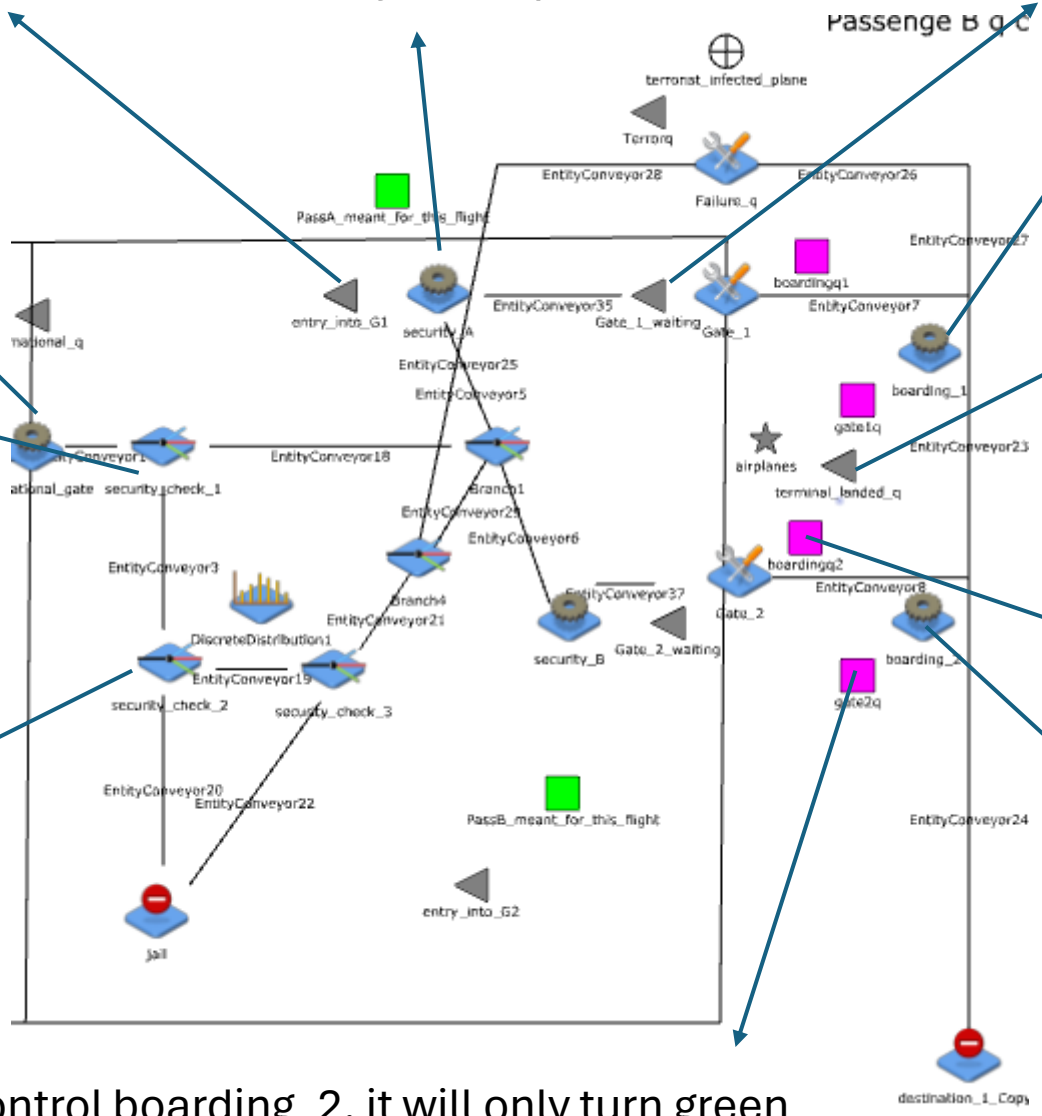
Queue to board the plane or people in the boarding hall

International gate processing function

Boarding function to take all those in the Q, Minimum of 8

Terminal_landed_q, shows all aircrafts that have landed and are ready to enter the gate

This will split terrorist from actual customers



Boarding threshold, will only turn green when there is a plane in the boarding_2, or plane is at the gate, this will allow for boarding to begin

Security threshold that has a capture rate of 95%, security check 1 is surface level and check 2 is bag check

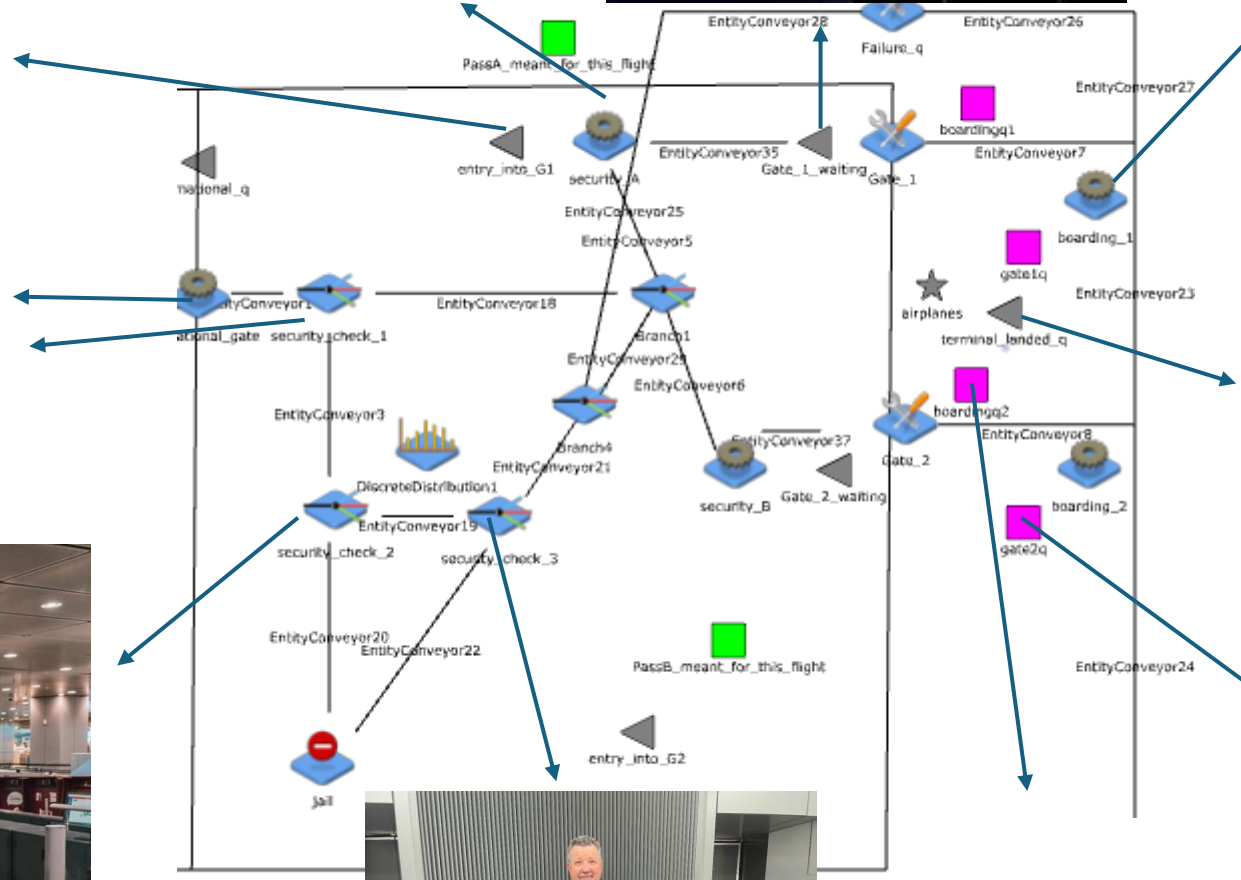
Boarding gate, it's the function that will relate customer to planes and creates a plane in (boarding time) for rest of the simulation

This will control boarding_2, it will only turn green and allow for plane to approach the gate when the queue_2_waiting or boarding hall is full

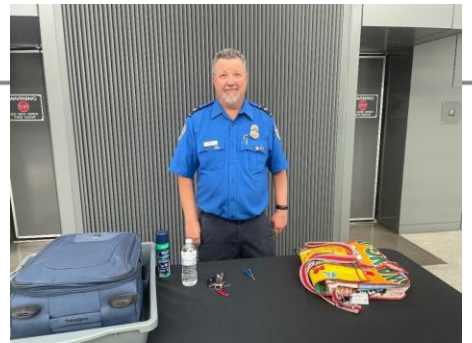

Gates 47, 45
Toilets


VietnamAirlines
VN247 15:00
HO CHI MINH
5
CI7A / GATE


3H PSI: 36 24H PSI: 28 – 34
DEPARTURE


PassA_meant_for_this_flight
EntityConveyor28
EntityConveyor26
Failure_q
EntityConveyor27
boardingq1
entry_into_G1
national_q
security_A
EntityConveyor35
Gate_1_waiting
Gate_1
EntityConveyor7
EntityConveyor25
EntityConveyor5
boarding_1
gate1q
airplanes
EntityConveyor23
terminal_landed_q
EntityConveyor18
Branch1
national_gate
security_check_1
EntityConveyor29
EntityConveyor6
boardingq2
EntityConveyor3
Branch4
EntityConveyor37
EntityConveyor8
Gate_2
EntityConveyor21
DiscreteDistribution1
security_B
Gate_2_waiting
boarding_2
EntityConveyor19
gate2q
security_check_2
security_check_3
EntityConveyor20
EntityConveyor22
PassB_meant_for_this_flight
EntityConveyor24
entry_into_G2
jail

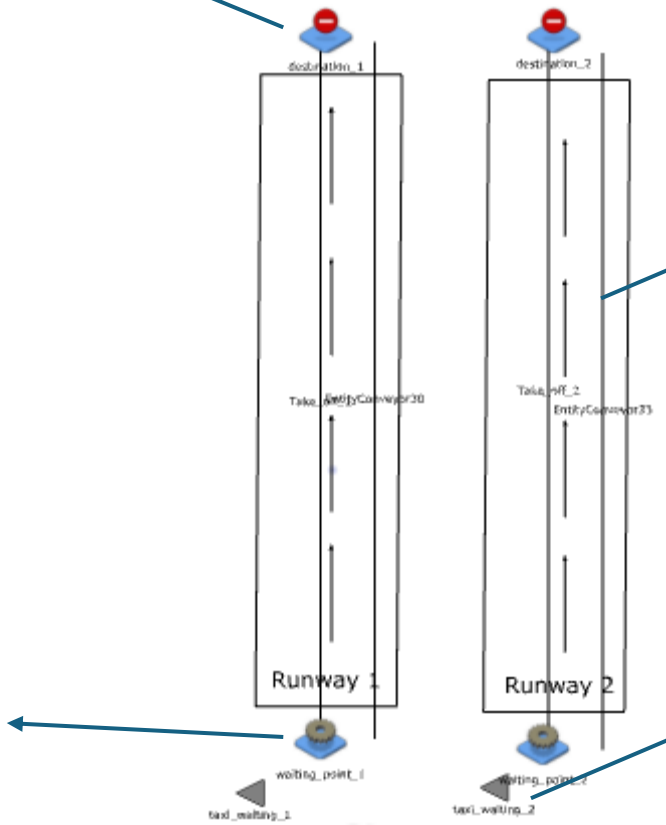

X and L stands




NOW BOARDING


dreamstime.com
ID 7185307 © Fallsview

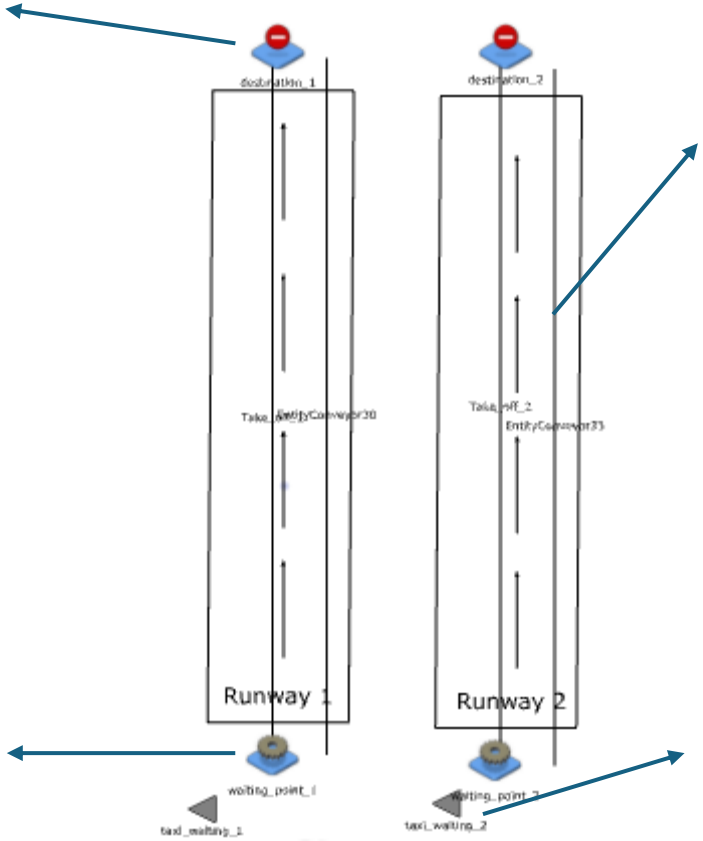
Destination function, removes the aircraft when it flies



When planes land, they will come down the runway simulating realism

This will facilitate the take-off procedures and give realism to showcase how long it takes for the aircraft to take off

Planes within these delegated queues will use their specific runway.


Runway 1
Runway 2


alamy
Image ID: TC7DB4
www.alamy.com

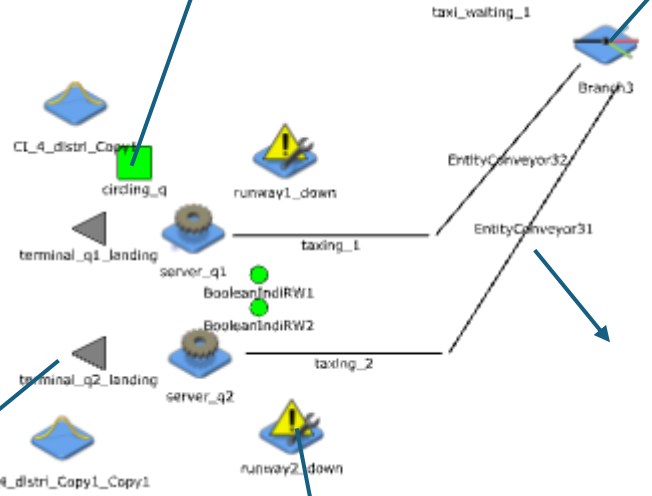
Will only generate aircrafts if landing bay isn't full

As planes come in, they will be send to which runway has least aircrafts circling

If both runways are down, and airspace is congested, threshold will hit closing new aircraft generation

As planes (full of passengers) taxi for take-off, they will go to the runway queue with the least number of aircraft waiting

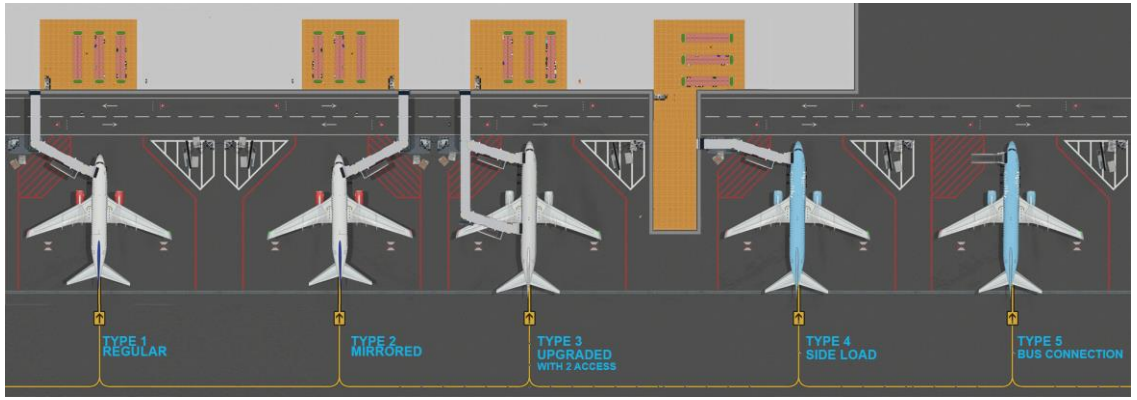
Aircraft generator with its distribution



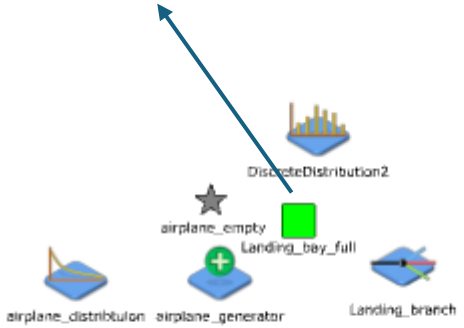
As planes get passengers, they will be sent to this conveyer, signalling them taxing to runway queue

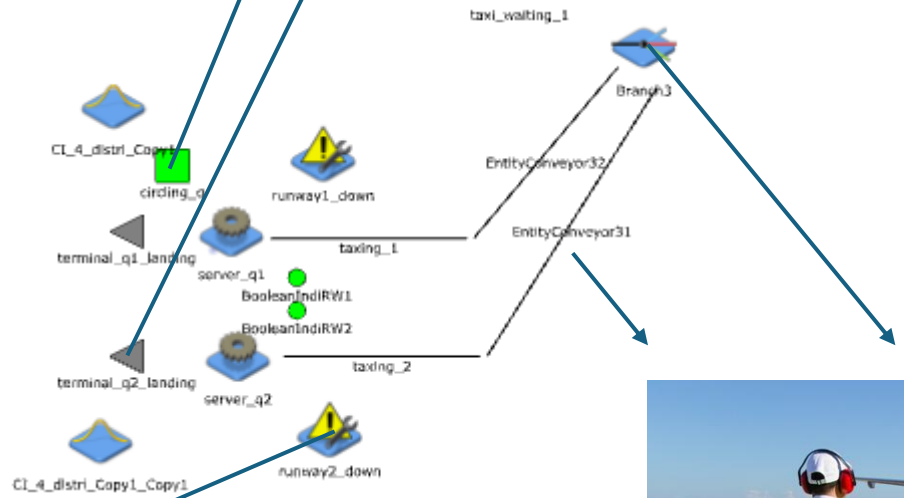
If the runway is currently servicing a jet, plane will circle around the airport

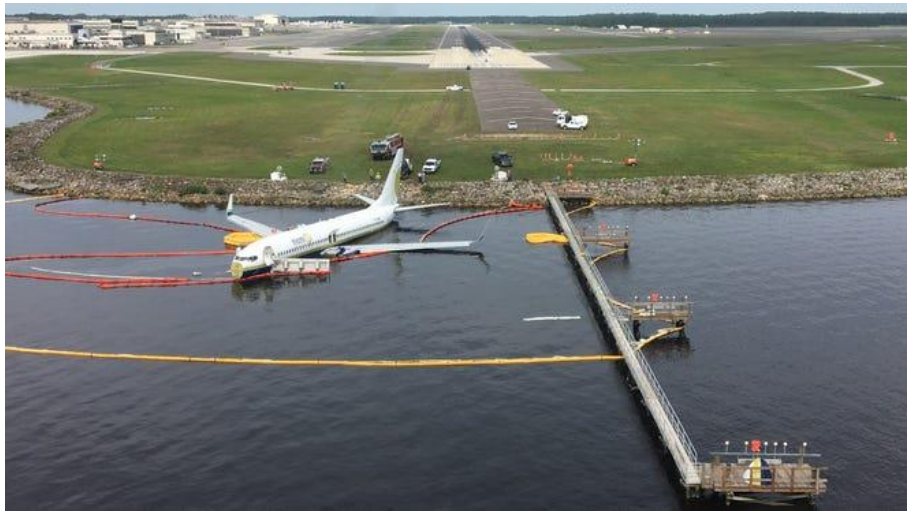
In a real-world, runways will be unusable sometimes, so runway will have a probability of failing with ranging down times.


TYPE 1
REGULAR
TYPE 2
MIRRORED
TYPE 3
UPGRADED
WITH 2 ACCESS
TYPE 4
SIDE LOAD
TYPE 5
BUS CONNECTION


gettyimages
Credit: RobinOlimb
450736573


DiscreteDistribution2
airplane_empty
Landing_bay_full
airplane_distribtulon
airplane_generator
Landing_branch

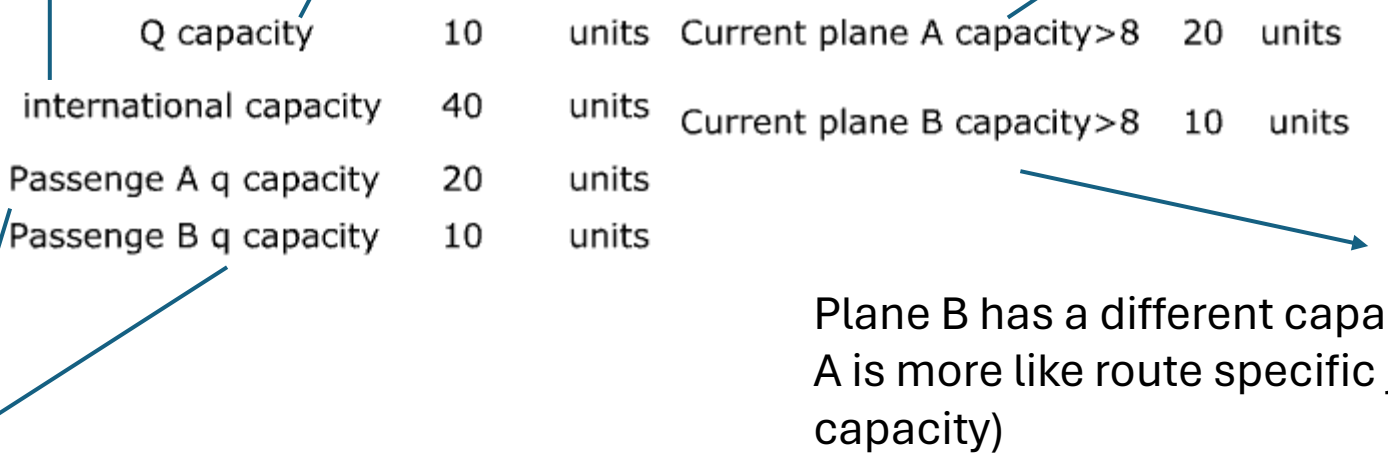

taxi_waiting_1
Branch3
EntityConveyor32
EntityConveyor31
runway1_down
taxing_1
server_q1
BooleanIndiRW1
BooleanIndiRW2
taxing_2
server_q2
runway2_down



Limit control for number of people that the check-in counters collectively can serve

Limit control for international queue

Plane A has a different capacity than B as plane A is more like commercial jet (with higher capacity) and B might be a different kind of planes

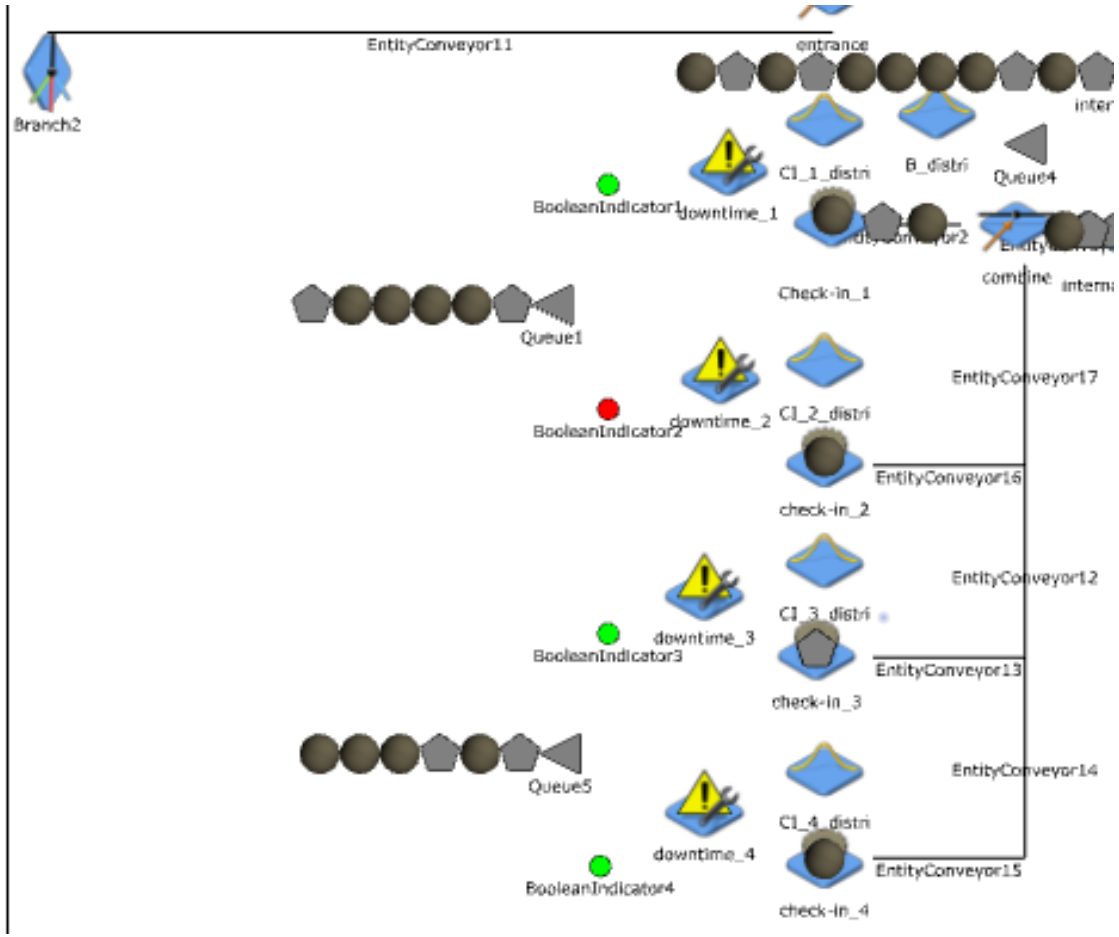


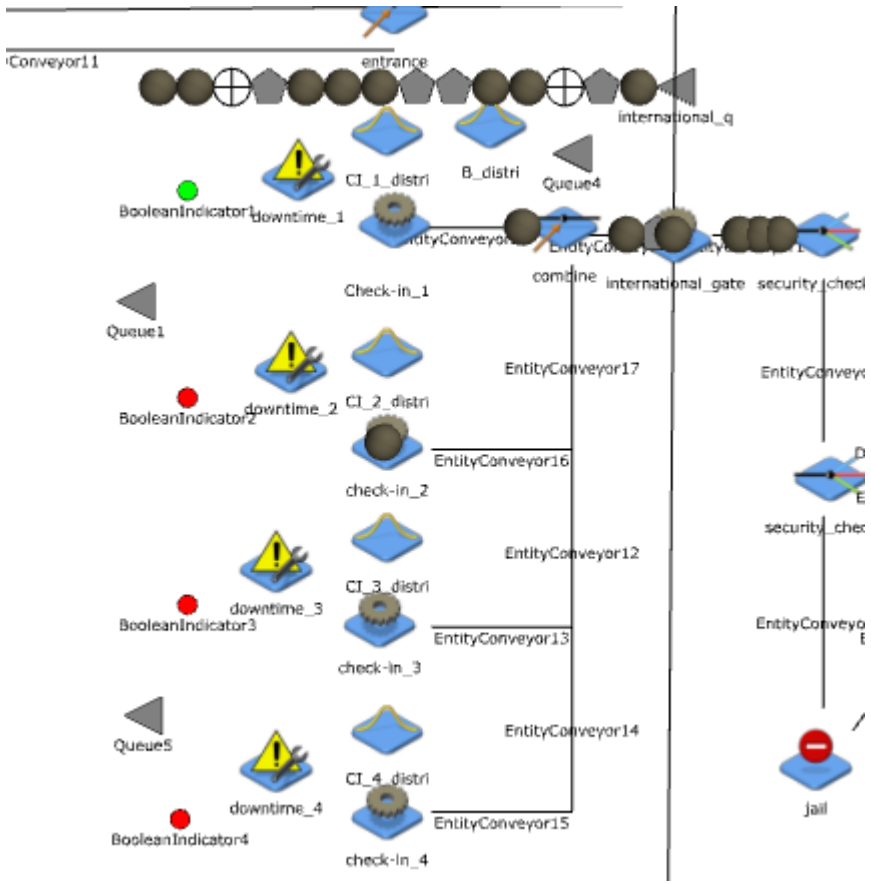
Plane B has a different capacity than B as plane A is more like route specific jet (with lesser capacity)

Q capacity controls from gates A and B

Step 1a

generate passengers if all conditions are not violated



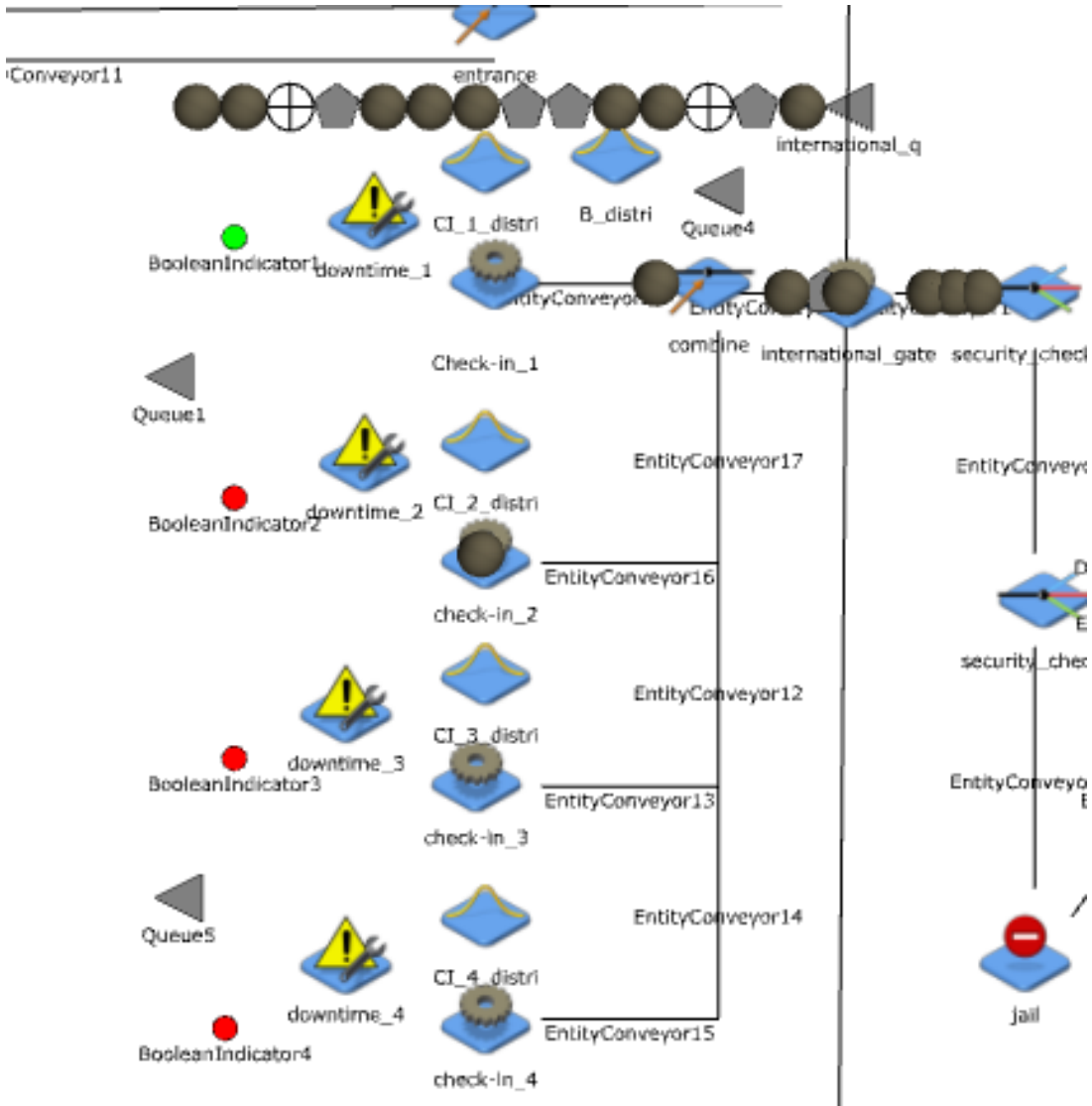


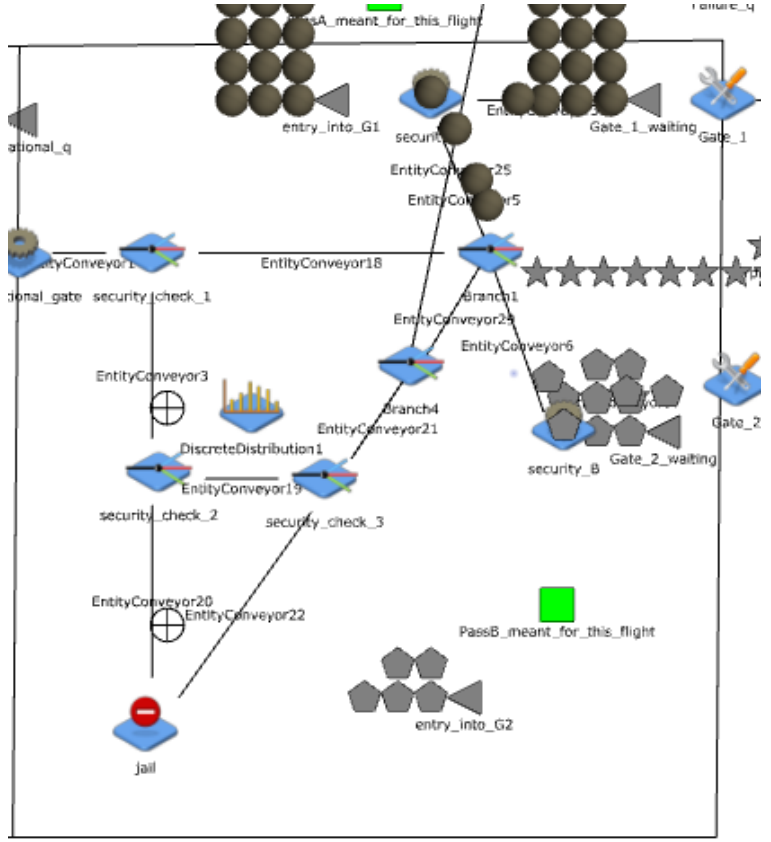
Step 2a

Clear passengers from check in to international queue -> international_gate

Step 3a

Passengers clear international gate, as queue for international gate is too long, airport is closed.





Step 4a

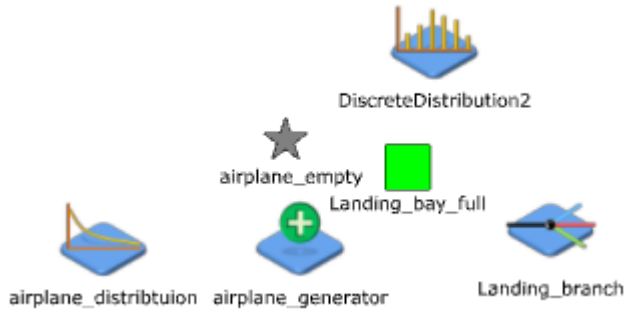
Passengers clear the security, while terrorist gets caught.

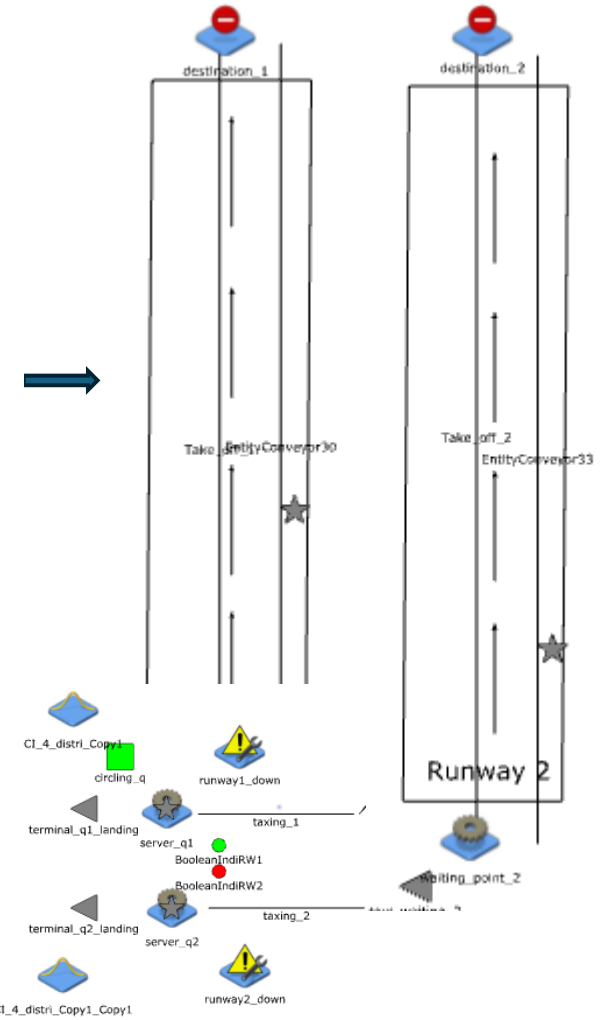
Passengers get ushered to either Gate A or Gate B.

Passengers line up to get security checked

As conditions for planes boarding and take off is met, passengers get ferried away

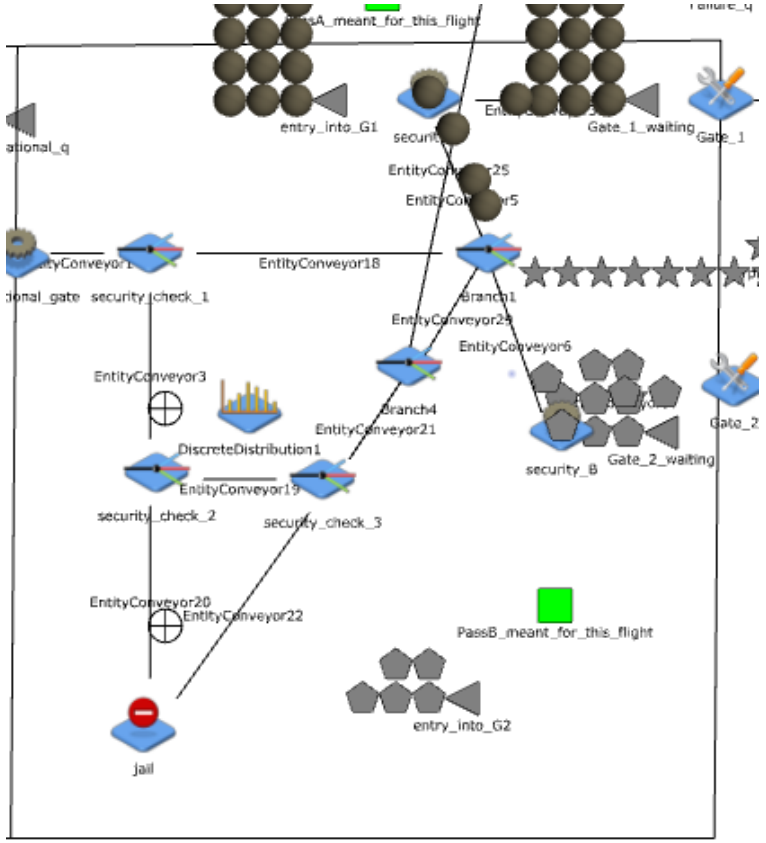
Step 1b
Generate airplanes





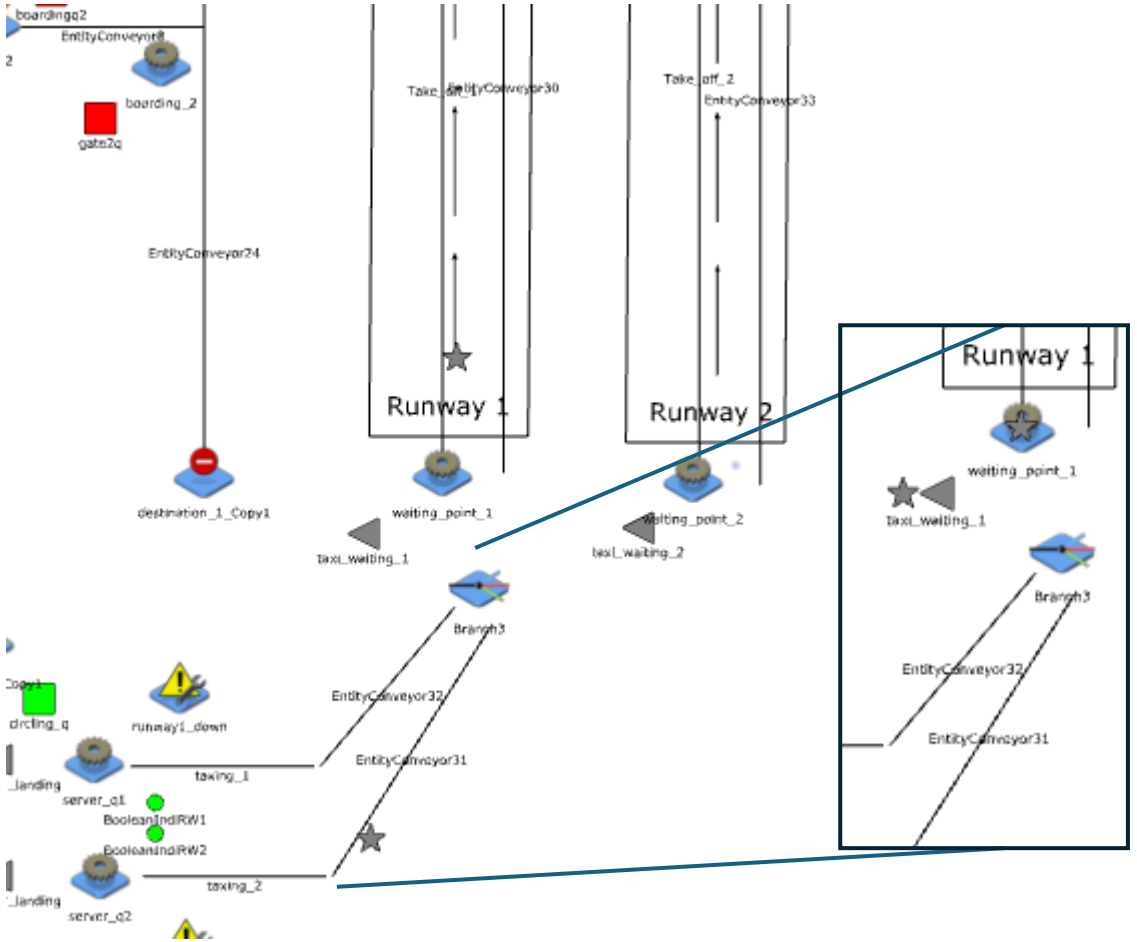
Step 2b
As planes come in, they land if the servers (runways) can handle them

Step 3b
As planes conditions are met, they take off



Step 4b

As planes are ready to take off, it will be sent to either 31 or 32, get in queue for take-off. Once runway is ready, plane take-offs



This shows how it will look when planes are waiting in line for another plane to take off