TSA Airport Screening Project
Actor-Based Design

1. Team

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2. Actors

Specify the design of your actors using as many copies of the following table as necessary.

Name: Document Scan			
State information (What does the actor know?):			
• The existence of queues. • The last queue that got a passenger sent.			
Responsibilities (What does the actor do?):			
• Sends passengers to the queues. • Reject Passengers whose documents are incomplete.			
Messages Received			
Message class	**Sender**	**Contents**	**Resulting action or effect**
PassengerMSG	Driver (Main)	Name of Passenger	Passenger added to Document Scan
SystemOnline	Driver (Main)	Signals start of day	Propagates through system
SystemOffline	Driver (Main)	Signals end of day	Propagates through system
Messages Sent			
Message class	**Recipient**	**Contents**	**Purpose and trigger**
PassengerMSG	Queue	Name of Passenger	Send Passenger to Queue
SystemOnline	Queue	Null	Signals start of day
SystemOffline	Queue	Null	Signals end of day

Name: Queue

State information (What does it know?):

- Passengers that it currently hold
- The readiness of the Body and Bag Scanners

Responsibilities (What does it do?):

- Separating the passenger and it's bags
- Sending them through the scanners

Messages Received

Message class	**Sender**	**Contents**	**Impact or effect**
PassengerMSG	Document Scan	Name of the Passenger	Adds the passenger to the queue
Ready	Bag/ Body Scan	Type of Scanner	Sends in new passengers to the scanners
SystemOnline	Document Scan	Signals start of day	Propagates through system
SystemOffline	Document Scan	Signals end of day	Propagates through system

Messages Sent

Message class	**Recipient**	**Contents**	**Purpose and trigger**
PassengerMSG	Body Scan	Name of the Passenger	Scans the Passenger Body, When the Body Scan is Ready
BagMSG	Bag Scan	Bags of the Passenger / Owner	Scan the Bags, When the Bag Scan is Ready
SystemOnline	Bag/ Body Scan	Null	Signals start of day
SystemOffline	Bag/ Body Scan	Null	Signals end of day

Name: Bag Scan

State information (What does the actor know?):

- The bags being scanned
- Its readiness state

Responsibilities (What does the actor do?):

- Failing or passing the bag inspection

Messages Received

Message class	Sender	Contents	Resulting action or effect
BagMSG	Queue	Bags of the Passenger / Owner	Scan the Bags
SystemOnline	Queue	Signals start of day	Propagates through system
SystemOffline	Queue	Signals end of day	Propagates through system

Messages Sent

Message class	Recipient	Contents	Purpose and trigger
ResultMSG	Security	Owner / Passed Scan	Results of the Scan, The Scan is Done
Ready	Queue	Type of Scanner	Let's the Queue know it's ready.
SystemOnline	Security	Null	Signals start of day
SystemOffline	Security	Null	Signals end of day

Name: Body Scan

State information (What does the actor know?):

- The passenger being scanned
- Its readiness state

Responsibilities (What does the actor do?):

- Failing or passing the body inspection

Messages Received

Message class	Sender	Contents	Resulting action or effect
PassengerMSG	Queue	Passenger Name	Run the Body Scan
SystemOnline	Queue	Signals start of day	Propagates through system
SystemOffline	Queue	Signals end of day	Propagates through system

Messages Sent

Message class	Recipient	Contents	Purpose and trigger
ResultMSG	Security	Passenger Name / Passed Scan	Results of the Scan, The Scan is Done
Ready	Queue	Type of Scanner	Let's the Queue know it's ready.
SystemOnline	Security	Null	Signals start of day
SystemOffline	Security	Null	Signals end of day

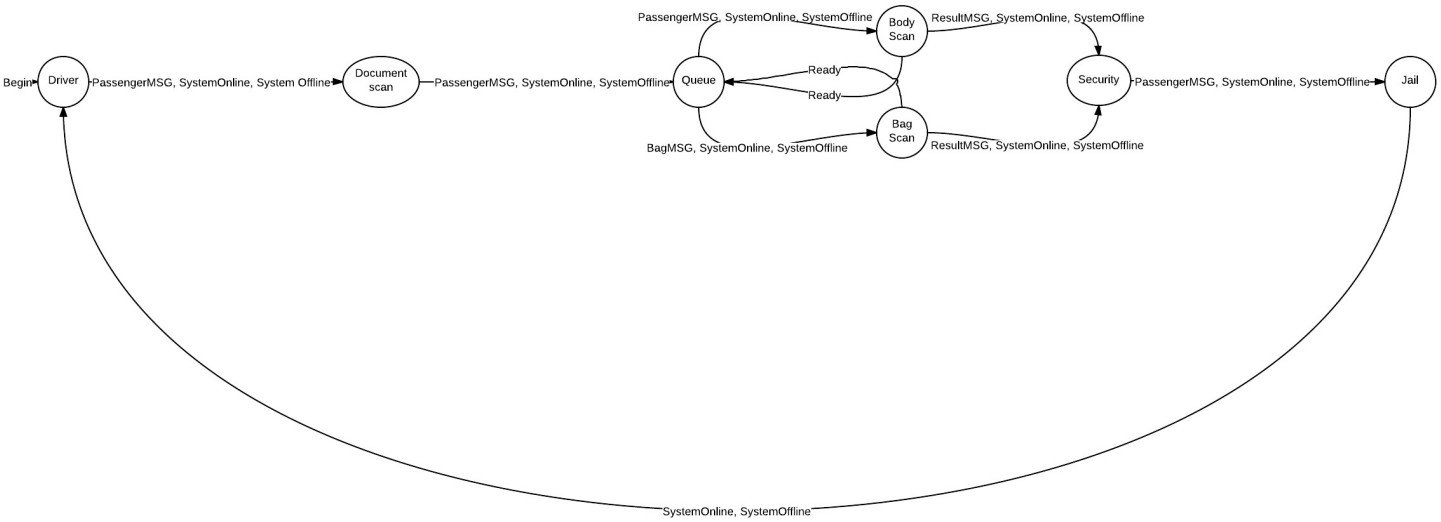
Name: Security			
State information (What does the actor know?): • The passenger that was scanned and if they passed or failed the body scan. • The passengers bag that was scanned and if they passed or failed the bag scan.			
Responsibilities (What does the actor do?): • Sending people to jail • Sending people to “freedom”			
Messages Received			
Message class	**Sender**	**Contents**	**Resulting action or effect**
ResultMSG	Bag/ Body Scan	Passenger Name/ Passed Scan	Decide their fate.
SystemOnline	Bag/ Body Scan	Signals start of day	Propagates through system
SystemOffline	Bag/ Body Scan	Signals end of day	Propagates through system
Messages Sent			
Message class	**Recipient**	**Contents**	**Purpose and trigger**
PassengerMSG	Jail	Passenger Name	Send the off to Jail
SystemOnline	Jail	Null	Signals start of day
SystemOffline	Jail	Null	Signals end of day

Name: Jail			
State information (What does the actor know?): • Who is in jail			
Responsibilities (What does the actor do?): • Sending passengers to permanent detention at the end of the day			
Messages Received			
Message class	**Sender**	**Contents**	**Resulting action or effect**
PassengerMSG	Security	Passenger Name	Add a new inmate
EmptyJail	Driver (Main)	N/A	Turns on the incinerator, politely guide inmates to it.
SystemOnline	Security	Signals start of day	Propagates through system
SystemOffline	Security	Signals end of day	Propagates through system
Messages Sent			
Message class	**Recipient**	**Contents**	**Purpose and trigger**
SystemOnline	Driver (Main)	Null	Signals start of day
SystemOffline	Driver (Main)	Null	Signals end of day

3. Actor Collaboration Diagram

Notes:

- [N] means N copies of the indicated actor, where N is an integer.
- [*] is zero of more, [+] is one or more
- Actors can be circles, ellipses, or rounded-corner rectangles – but be consistent!
- Messages sent as responses are shown with dotted lines, physically close to the triggering message.
- Use whatever drawing tool you are most familiar with, then copy and paste the actor collaboration diagram



4. Changes Made From Original Design

We decided to link the Jail to the driver to implement a day start and day end call that would let the system know when to start/stop. With this connection, we added a message to every actor to both receive and send a SystemOnline and SystemOffline message.