# TSA Airport Screening Actor-Based Design

## Team

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## Actors

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** BaggageScan | | | |
| **State information (What does the actor know?):**   * Knows what Line it is in * Knows which Security station it goes to | | | |
| **Responsibilities (What does the actor do?):**   * Fails 20% of the time on a scan | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Resulting action or effect** |
| BAG | Queue | PASSENGER reference | BaggageScan inspects it and has a 20% chance of failing the Passenger |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |
| FAIL | Security | PASSENGER reference | If BAG fails, it sends this report to security |
| PASS | Security | PASSENGER reference | If BAG passes, it sends this report to security |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** BodyScan | | | |
| **State information (What does it know?):**   * Knows what Line it is in * Knows which Security station it goes to | | | |
| **Responsibilities (What does it do?):**   * Fails 20% of the time on a scan | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Impact or effect** |
| PASSENGER | Queue | int identifier | BodyScan inspects it and has a 20% chance of failing the Passenger |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |
| FAIL | Security | PASSENGER reference | If PASSENGER fails, it sends this report to security |
| PASS | Security | PASSENGER reference | If PASSENGER passes, it sends this report to security |

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| --- | --- | --- | --- |
| **Name:** Jail | | | |
| **State information (What does it know?):**   * Knows how many security stations give it passengers * Knows the prisoners in the jail until the end of the day | | | |
| **Responsibilities (What does it do?):**   * Holds prisoners until the end of the day * Sends prisoners to permanent detention at the end of the day | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Impact or effect** |
| PASSENGER | SecurityStation | int identifier | Causes Jail to hold the PASSENGER |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** Line | | | |
| **State information (What does it know?):**   * Knows which BaggageScan is in it * Knows which Line it is * Knows which Queue it has * Knows which BodyScan is in it * Knows which SecurityStation it has | | | |
| **Responsibilities (What does it do?):**   * Wraps all the scanners and Queue together | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Impact or effect** |
| PASSENGER | Driver | int identifier | Sends PASSENGER to Queue |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |
| PASSENGER | Queue | int identifier | Automatically does this |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** Queue | | | |
| **State information (What does it know?):**   * Knows what Line it is in | | | |
| **Responsibilities (What does it do?):**   * Holds PASSENGERS and BAGS until the scanner is ready | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Impact or effect** |
| PASSENGER | Driver | int identifier | PASSENGER waits in Queue for BodyScan. Creates a BAG message to wait for BaggageScan. |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |
| BAG | BaggageScan | PASSENGER reference | Causes this BAG to be scanned |
| PASSENGER | BodyScan | int identifier | Causes this PASSSENGER to be scanned |

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** SecurityStation | | | |
| **State information (What does it know?):**   * Line it is in * The reports its received so far * Knows the Jail | | | |
| **Responsibilities (What does it do?):**   * Compares PASS and FAIL reports for specific passengers as it receives them * Can’t close until both scanners have been turned off | | | |
| **Messages Received** | | | |
| **Message class** | **Sender** | **Contents** | **Impact or effect** |
| PASS | BaggageScan, BodyScan | PASSENGER reference | Causes SecurityStation to see if it already has another report for that PASSENGER. If not, it stores the report. |
| FAIL | BaggageScan, BodyScan | PASSENGER reference | Causes SecurityStation to see if it already has another report for that PASSENGER. If not, it stores the report. |
| **Messages Sent** | | | |
| **Message class** | **Recipient** | **Contents** | **Purpose and trigger** |
| PASSENGER | Jail | int identifier | Sends PASSENGER if either report for that PASSENGER is a FAIL |

## Actor Collaboration Diagram

