

ProCP – User Requirements

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Introduction

Airport luggage simulation: A manager can configure the resources (employees, carts, etc.) required to simulate the processing of luggage from arriving and leaving airplanes. The simulation provides the means to determine the optimal resource allocation via statistics related to how the luggage has been processed.

MoSCoW table

Requirements	Must	Should	Could	Won't
Option to save the output or start a new simulation	X			
Keep track of how many employees are active at the moment	X			
Keep track of the number of carts in use at the moment	X			
Simulate the baggage transport (multiple pieces of luggage on the same belt)	X			
Enter the number of planes, passengers and bags per simulation		X		
Enter the number of passengers and bags per plane		X		
The simulation should be finite		X		
The simulation will show statistics (luggage checked in, time passed, amount of carts used, employees carrying the carts etc...) while the simulation is running	X			
A pop-up form with the final statistics at the end of the simulation			X	
Simulate the planes				X
Simulate the activity of multiple belts at a time			X	

Use cases

1. Name: **Starting the simulation**

Description: The process of setting up the simulation and starting it by providing the required details and settings

Actors: User

Preconditions: The input form must be filled in and successfully submitted

Main success scenario:

1. The user sets up the belt system layout by interacting with the GUI's provided functionalities.
2. The system allows a simulation startup.
3. The user presses the Start button.
4. The system begins the simulation.

Exceptions:

- 3a. The user chooses to Reset instead.
 1. The use case goes back to step 1 of MSS.

2. Name: **Building a belt**

Description: The process of setting up a path for the pieces of luggage to circulate

Actors: User

Main success scenario:

1. The user selects a type of belt piece from the left side of the window by clicking on it.
2. The user clicks on the desired space from the grid where they would like the selected type of belt piece to be placed.
3. Steps 1 and 2 are repeated until the belt is fully built.
4. The user places the check-in desks at the beginning of each belt.

Exceptions:

- 1a. The user picked a wrong belt piece type.
 1. The user clicks on another kind of belt piece.
 2. Use case goes forward to step 2 of MSS.
- 2a. The user picked a wrong spot in the grid where there shouldn't be a belt.
 1. The application will ignore it and the simulation will continue working unless the wrong piece is horizontal and is placed in the first column. In this case the application will show a pop-up form with an error message.
- 2b. The user placed the wrong kind of belt in the grid.
 1. The user selects another type of belt piece.
 2. Use case goes forward to step 3 of MSS.
- 3a. The user has not finished building the belt or has inserted a belt block that interrupts the smooth flow of the luggage, but has pressed the start.
 1. The application will predict the missing spots by highlighting them in red.
 2. The user will be notified through a pop-up window that the belt contains an inappropriate piece.
 3. The system goes back to step 2 of MSS.

3. Name: **Stopping the simulation**

Description: The act of halting the simulation's activity

Actors: User

Preconditions: The simulation is running

Main success scenario:

1. The user presses the Stop button.
2. The system stops the simulation.
3. The system displays the final results of the recently run simulation.

4. Name: **Saving the results of a simulation**

Description: The process of saving the recently run simulation's results to a text file

Actors: User

Preconditions: A simulation has been successfully run beforehand

Main success scenario:

1. The user presses the Save button.
2. The system opens up a save file dialog.
3. The user chooses the location and presses Save.

Exceptions:

- 2a. The user chooses to cancel instead.
 1. The use case goes back to step 1 of MSS.