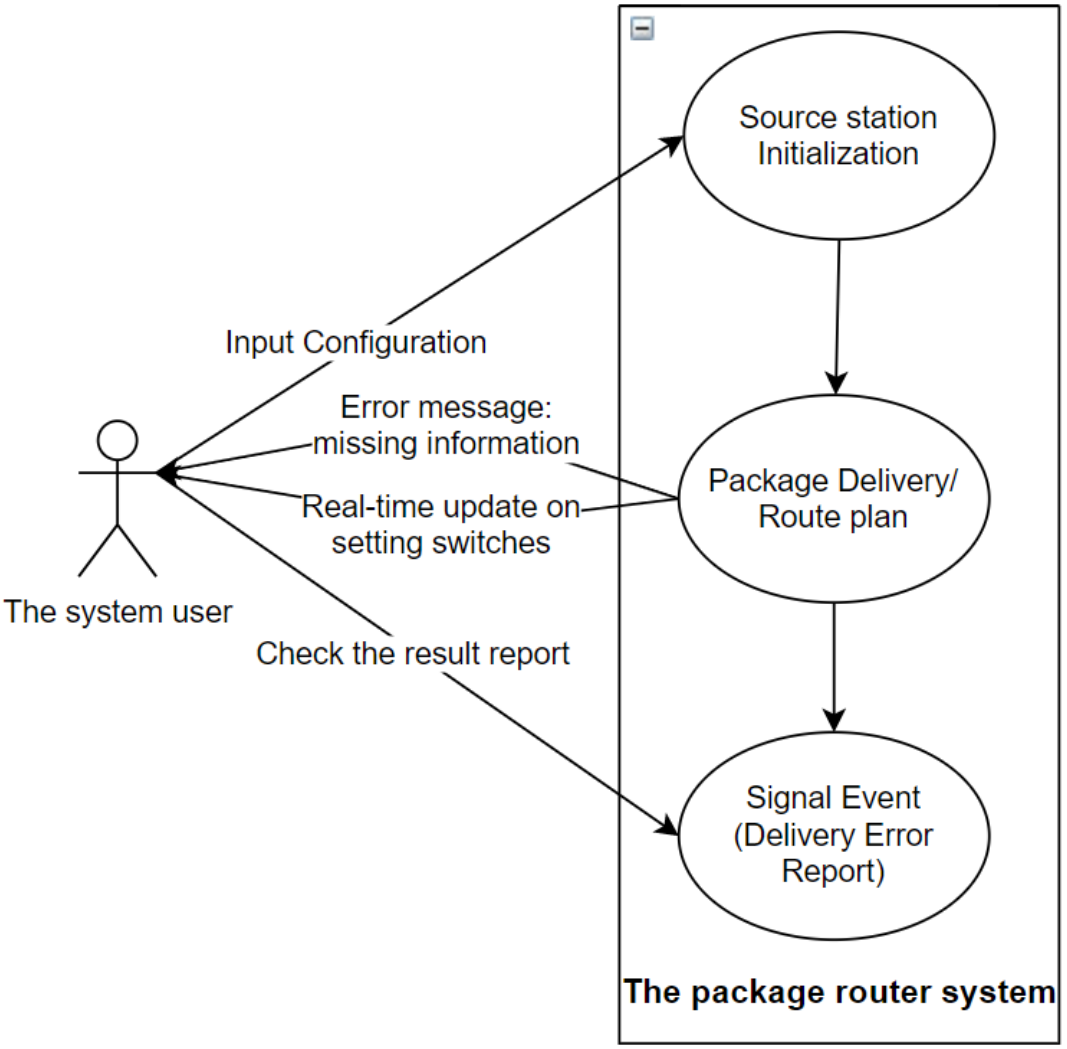
Use Case Diagram



Use Case List

The package router system

Use Case ID	UC-PR-001
Use Case Name	Source Station Initialization
Goal	Let the system user enter the information of expected packages for the system to initialize, and return the scheduled timeline.
Requirement	
Description	The user enters the delay time, the packages and their destinations. The system returns the timeline of packages sent.
Actor	The user
Assumptions	
Constraints	
Priority	High
Pre-Conditions	
Post-Conditions	
Basic Flow	1. The user enters the delay time, the packages and their destinations to the source station. 2. The system checks the format is correct and the input details are complete. 3. The system returns the expected timeline of packages sent.
Alternative Flow 1 *Incorrect Format*	2.a If the input format is incorrect: the entered number of packages or number of bins is not a positive integer, a notification will urge the user to input according to the system.
Alternative Flow 2 *Input Incomplete*	2.b If the user did not enter all information: the lack of destinations of any packages, a notification will urge the user to enter the complete information again.
Exceptional Flows	
Use Use Case	
Extends Use Case	
Business Rules	
Special Requirements	
Artifacts	

Use Case Glossary	

Use Case ID	UC-PR-002
Use Case Name	Package delivery(set switch)
Goal	Let the system user deliver packages in the system.
Requirement	
Description	The user inputs information about the package, such as package name, destination of bin etc, and then the system delivers the package to the destination. As the packages pass the sensors, the input will be updated accordingly. So that the system can set switches to match the destinations of the packages and return the output in real time.
Actor	The package router system itself.
Assumptions	
Constraints	
Priority	High
Pre-Conditions	
Post-Conditions	
Basic Flow	1. The system calls input information from the source station, such as the number of bin, number of packages, name of packages name, destination of the package. 2. The system decides what switches to set according to the sensor inputs and output the set-switch action to the user to monitor.
Alternate Flow 1 *Lack of information*	1.a If the system cannot get complete information from the source station, an error message will be sent to the system user to urge him or her to complete the input configuration at the source station.
Exceptional Flows	
Use Use Case	
Extends Use Case	
Business Rules	
Special Requirements	

Artifacts	
Use Case Glossary	

Use Case ID	UC-PR-003
Use Case Name	Signal Event (Delivery Error Report)
Goal	Let the system user know which packages go to the wrong destination.
Requirement	
Description	Users can check for correctness of the execution result.
Actor	The system user
Assumptions	
Constraints	
Priority	High
Pre-Conditions	
Post-Conditions	
Basic Flow	1. function will get some information from the system such as the number of packages, the pairs of package id and its destination, the pairs of bin and received packages. 2. show the packages which go to the wrong destination.
Alternative Flows *Missing information*	1.a If the system cannot get information from the source station, the system will raise the exception.
Exceptional Flows	
Use Use Case	
Extends Use Case	
Business Rules	
Special Requirements	
Artifacts	
Use Case Glossary	