TRAFFIC MANAGEMENT SYSTEM

Report on Use Case Diagram (Week -7)

Information System Design Project

(CSE 308)

CSE A2

Group 2

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Subsystems:

- Road network and updating jam subsystem
- Query Subsystem
- Complain subsystem
- Highway assistance subsystem

In previous week we had a subsystem named Renting Subsytem. But as it does not go with the idea of traffic management system, we dropped out the subsystem and introduce two new subsystems which are Query Subsystem and Complain Subsystem.

Actors:

- User
    - Normal
    - Subscribed
    - Authorized
- Admin Panel
- Roads and Highway department
- Ministry of shipping
- Ministry of Communication
- Dhaka Metropolitan Police

Actors Glossary

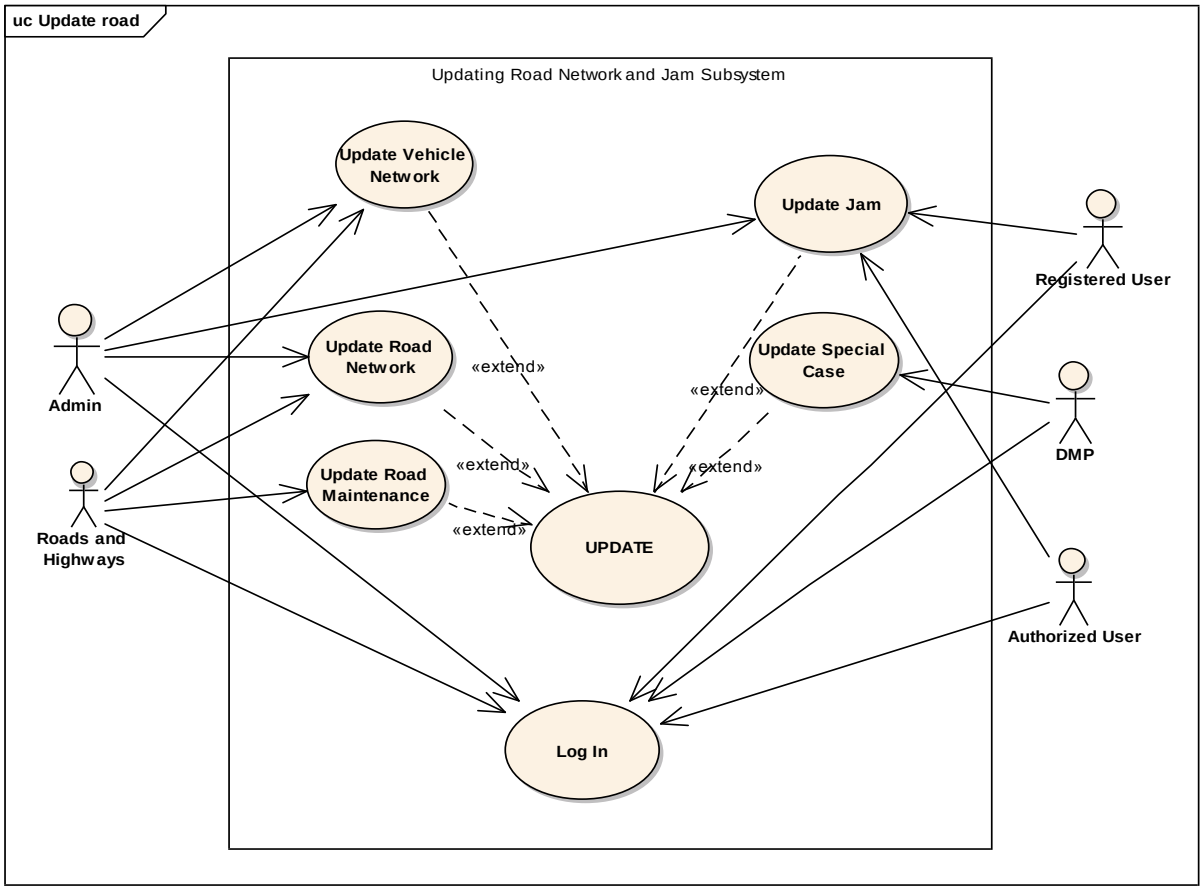
Actor	Short Key
Roads and Highway department	RHD
Ministry of Shipping	MS
Ministry of Communication	MC
Normal user	NU
Registered User	RU
Authorized user	AU
Admin	ADM
Dhaka Metropolitan Police	DMP

Subsystem 1:

Road Network And Updating Jam Subsystem

Use Case ID	Name	Description	Participant Actors and Roles
1.1	Log In	Log into member account	ADM, DMP, RU, AU, RHD can log into their accounts
1.2	Update Road Network	Update which roads are connected to each other	ADM, RHD can update road network
1.3	Update Road Maintenance	Updates which roads are under maintenance	RHD can update road maintenance
1.4	Update Jam	Update the data about jam	ADM, AU, RU can update jam data
1.5	Update Special Case	Update special cases for V.V.I.P	DMP can update special cases
1.6	Update Vehicle Network	Update the available and allowed vehicles in a road	ADM, RHD can update vehicle network

Use Case Diagram for Updating Road Network and Jam Subsystem



1.1 LogIn Usecase

Use-Case name	**Define route and price**
Use-Case ID	1.1
Priority	High
Primary Business Actor	ADM, RU, AU, DMP
Primary System Actor	ADM, RHD, DMP, AU
Description	Actors can log into their accounts
Trigger	ADM, RHD, DMP, AU

Typical Course of Events

Actor Action	**System Action**
1. Attempt to log in to system from internet or mobile app	2. Verification and log in
	3. Show account to actor
4. Access personal account	

Documentation of the use-case(1.1) course of events

- **Conclusion:** concludes when user is logged into their respective account.
- **Post-condition:**show actor the respective personal account to access communication.
- **Implementation issues**: GUI will be provided in the website to log in, a Mobile app will be provided to log in from mobile devices.

1.2 Update Road Network

Use-Case name	**Define route and price**
Use-Case ID	1.2
Priority	HIGH
Primary Business Actor	ADM, DMP, RU, AU, RHD
Primary System Actor	RHD
Description	Actors can update connectivity of roads
Trigger	ADM,RHD

Typical Course of Events

Actor Action	System Action
1.Update the road network	2.Road network updated

Documentation of the use-case(1.2) course of events

- **Conclusion:** concludes when system updates the road network
- **Implementation issues**: A database should be made and GUI on a website and a mobile app will be provided to allow actors to update the database of road network

1.3 Update Road Maintenance Usecase

Use-Case name	Define route and price
Use-Case ID	1.3
Priority	High
Primary Business Actor	ADM, DMP, RU, AU, RHD
Primary System Actor	ADM, RHD
Description	Actors can update which roads are under maintenance currently
Trigger	ADM, RHD

Typical Course of Events

Actor Action	System Action
1.Update the list of roads under maintenance	2. List of roads under maintenance updated

Documentation of the use-case(1.3) course of events

- **Conclusion:** concludes when system updates the roads under maintenance
- **Implementation issues**: A database should be made and GUI on a website and a mobile app will be provided to allow actors to update the database of roads under maintenance

1.4 Update Jam Usecase

Use-Case name	**Define route and price**
Use-Case ID	1.4
Priority	HIGH
Primary Business Actor	ADM, DMP, RU, AU, RHD
Primary System Actor	ADM,AU,RU
Description	Actors can update the condition of jam in a certain road
Trigger	ADM,ATH,REG

Typical Course of Events

Actor Action	System Action
1. Updatethe Jam Data	2. Jamdata updated according to the weight(significance quotient) of the actor

Documentation of the use-case(1.4) course of events

Conclusion: concludes when system updates the jam data.

Implementation issues: A database should be made and GUI on a website and a mobile app will be provided to allow actors to update the database of jam data according to their significance.

1.5 Update Special Case Usecase

Use-Case name	**Define route and price**
Use-Case ID	1.5
Priority	High
Primary Business Actor	ADM, DMP, RU, AU, RHD
Primary System Actor	DMP
Description	Actors can update which roads will be unavailable to normal users due to arrival of a V.V.I.P during a certain a period of time
Trigger	ADM, DMP

Typical Course of Events

Actor Action	System Action
1. Updatethe Special Cases	2. Specialcases updated

Documentation of the use-case(1.5) course of events

- **Conclusion:** concludes when system updates the special case
- **Post-condition:**system will show to users which roads will be unavailable to normal users due to arrival of a V.V.I.P during a certain a period of time
- **Implementation issues**: GUI on a website will and a mobile app will be provided to actors to update the special cases

1.6 Update Vehicle Network

Use-Case name	Define route and price
Use-Case ID	1.6
Priority	Medium
Primary Business Actor	ADM, DMP, RU, AU, RHD
Primary System Actor	ADM, RHD
Description	Actors can update the allowed and available vehicles in a certain road
Trigger	ADM

Typical Course of Events

Actor Action	System Action
1. Updatethe vehicle network	2. Vehicle network updated

Documentation of the use-case(1.6) course of events

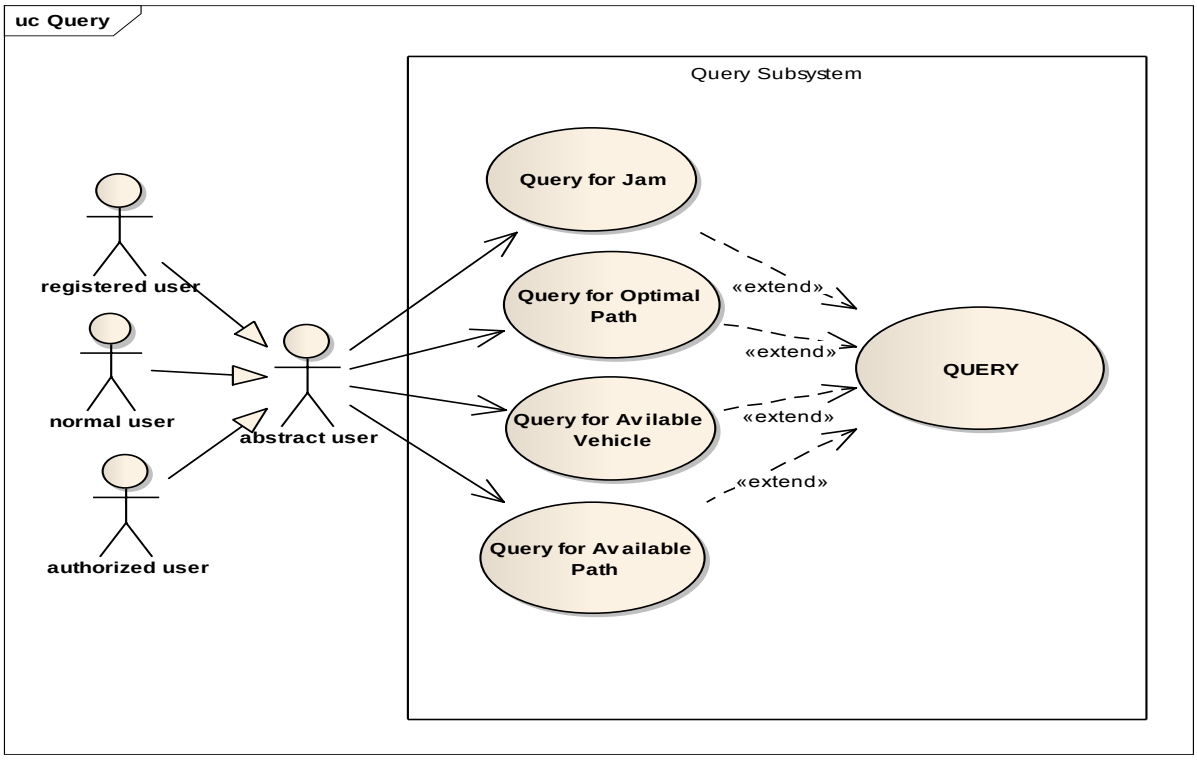
- **Conclusion:** concludes when system updates the vehicle network
- **Post-condition:** show users the respective available and allowed vehicles on the road of user's choice
- **Implementation issues**: A database should be made and GUI on a website will allow actors to update the database of vehicles

Subsystem 2:

Query Subsystem

Use-Case ID	Name	Description	Participant Actors and Roles
2.1	Query for Jam	Show the routes that are jam at that moment.	AU, RU, NU query for jam via abstract user
2.2	Query for Optimal Path	Show the optimal or minimum distance from source t destination	AU,RU, NU query for jam via abstract user
2.3	Query for Available Path	Show the paths those are jam free at that moment	AU, RU, NU query for jam via abstract user
2.4	Query for Vehicles	Ensure the user about a vehicle in emergency or normal cases	AU, RU, NU query for jam via abstract user

Use-Case Diagram of Query Subsystem



2.1 Use Case Narrative : Query for Jam

Use-Case name	**Define route and price**
Use-Case ID	2.1
Priority	High
Primary Business Actor	AU, RU, NU
Primary System Actor	AU, RU, NU
Description	Show the routes that are jam at that moment.
Trigger	Any one of AU, RU, NU

Typical course of events

Actor Action	**System Action**
1. Attempt to query for jam from source to destination	2. Take the source and destination place.
	3. Find out the routes that are jam at that moment taking the update from system
	4. Show the list of routes that are jam to the user.

Documentation

- Conclusion:
  - Concludes after providing the list of jam route
- Business Rules :
  - Provide the list of routes only the user

2.2 Use Case Narrative : Query for Optimal Path

Use-Case name	**Define route and price**
Use-Case ID	2.2
Priority	High
Primary Business Actor	AU, RU, NU
Primary System Actor	AU, RU, NU
Description	Show the optimal or minimum distance from source t destination
Trigger	ADM

Typical course of events

Actor Action	System Action
1. Try to query for find out the optimal path from source to destination	2. Take the source and destination .
	3. Find out the optimal path or minimum path from update records
	4. Provide the list to user .

Documentation

- **Conclusion :**
  - Concludes after finding the optimal path
- **Implementation issues:**
  - GUI will be provided for query of optimal path.

2.3 Use Case Narrative : Query for Available Path

Use-Case name	**Define route and price**
Use-Case ID	2.3
Priority	High
Primary Business Actor	AU, RU, NU
Primary System Actor	AU, RU, NU
Description	Showthe paths those are jam free at that moment
Trigger	Any one ofAU, RU, NU

Typical course of events

Actor Action	System Action
1. Try to query for find out the available path from source to destination	2. Take the source and destination .
	3. Find out the available paths from the update records
	4. Show the list of available to the user

Documentation

- **Conclusion:**
  - concludes when the user get the list
- **Implementation issues:**
  - GUI will be provided for query of optimal path.
- Business Rules:
  - provide the list of optimal path to user.

2.4 Use Case : Query for Available Vehicles

Use-Case name	**Define route and price**
Use-Case ID	2.4
Priority	high
Primary Business Actor	AU, RU, NU
Primary System Actor	AU, RU, NU
Description	Ensure the user about a vehicle in emergency or normal cases
Trigger	Any one ofAU, RU, NU

Typical course of events

Actor Action	**System Action**
1. Sent request or query for vehicle in normal or emergency cases	2. Take the request or query from the user.
	3. Sent the request the control system.
	4. Control system will manage the vehicle and send the ensure message to user.

Documentation

Conclusion:

- Concludes after providing the ensure message

Implementation issues:

- GUI will be provided for ensure message.

Business Rules :

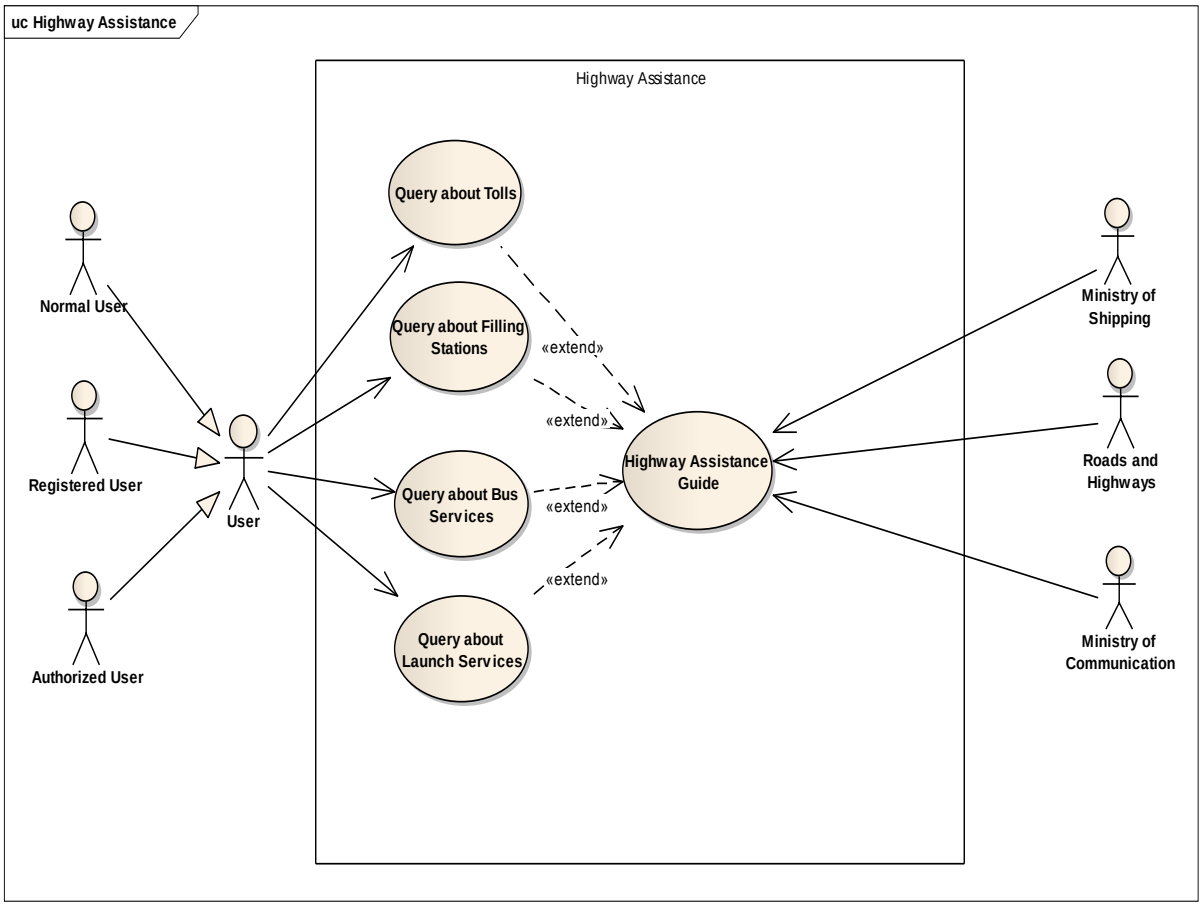
- Send ensure message only for request.

Subsystem 3:

Highway Assistance Subsystem

Use case Id	Name	Description	Participant actors and roles
3.1	Highway Assistance guide	Give a clear information about tolls, launch services , bus services, filling stations etc	Users are given with information about their query and the RHD, MC, MS update the guidance

Use case diagram of Highway Assistance Subsystem



HIGHWAY ASSISTANCE GUIDE Usecase

Use Case Name	Define route & Price
Use case id	3.1
Priority	High
Primary business actor	NU, AU, SU, MC, MS, RHD
Primary system actor	MC, MS, RHD
Description	Actors can get information ,and can also give feedback to the system through their devices
Trigger	NU, RU, AU

Typical course of events

Actor Action	System Response
1. The users select the query	2. The subsystem supplied with the result.
2. TheMS, MC notify current conditions about highway	4. The system get updated with the new situation

Documentation

Conclusion: When the query is completed.

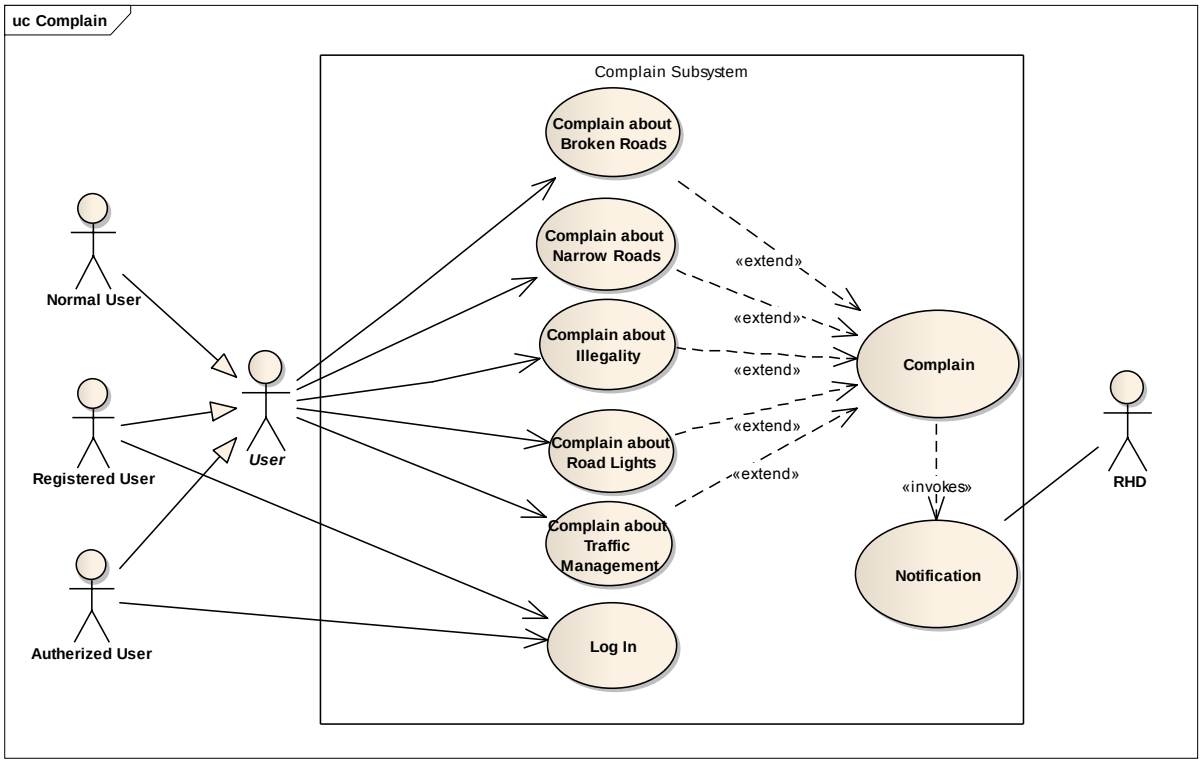
Implementation: GUI will be provided for the query .

Subsystem 4:

Complain Subsystem

Use-case ID	Name	Description	Actors and Roles
4.1	Log in	Subscribed and Authorized users need to login to file their complaints	Users can log in
4.2	Complain	Users can complain anything about a road in order to develop it	AU, RU can complain
4.2	Notification	According to the count of complaints, RHD will be notified about public demand	RHD will be notified

Use case Diagram of Complain Subsystem



4.1: Log in Usecase

Use-Case name	**Define route and price**
Use-Case ID	4.1
Priority	Medium
Primary Business Actor	Any User, ADM
Primary System Actor	ADM
Description	Log in to report complaints
Trigger	NU,AU, RU,ADM

Typical course of events

Actor Action	**System Action**
1. Attempt to log in	2. Verify the account and log in
	3. Show account to actor
4. File their complaints	

Documentation

- **Conclusion:** concludes when logged into account
- **Post-condition:** show actor the respective personal account
- **Implementation issues:** GUI will be provided in the website to log in, a Mobile app will be provided to log in from mobile devices

4.2 Complain Usecase

Use-Case name	**Define route and price**
Use-Case ID	4.2
Priority	Medium
Primary Business Actor	AU, RU
Primary System Actor	ADM
Description	AU, RU can complain about a road
Trigger	AU, RU, ADM

Typical Course of Events

Actor Action	**System Action**
1. Search the road map for the place to complain	2. Show the Road map
3. Find the place on the map	4. Show the list of complaints
5. Report the complaint	6. Flag the complaint and count the number of flags
	7. Notify the RHD if too many flags

Documentation

- **Conclusion:** concludes for user when the complain is accepted
- **Post-condition:** notify the RHD to about the complain in case of too many flags
- **Implementation issues:** graphical road map and list of complaints will be provided to the users

4.3 Notification Usescase

Use-Case name	**Define route and price**
Use-Case ID	4.3
Priority	Medium
Primary Business Actor	ADM
Primary System Actor	RHD
Description	In case of too many flags, system will notify RHD to develop the road
Trigger	ADM

Typical Course of Events

Actor Action	**System Action**
	1. Notify the RHD in case of too many flags
2. RHD takes necessary actions to develop the road	3. System remove the flags

Documentation

- **Conclusion:** concludes for user when the complain is accepted
- **Post-condition:** notify the RHD to about the complain in case of too many flags
- **Implementation issues:** graphical road map and list of complaints will be provided to the users