Scope	URBAN MOBILITY SIMULATOR
Level	User goal
Primary Actor	TRADE OFF ANALIST
Stakeholders and Interests	- Trade off analyst: want a reliable system capable of performing trustworthy and accurate simulations of scenarios. want to use and make scenario simulations to be foundation of arguments made in the tradeoff analyses. - MR Dalpiaz: wants a solution and correct trade off analyses to present to the vice-mayor. wants the reduce the overhead caused by a bottleneck. - Vice-mayor: wants accurate trade off analyses and options to consider and approve change of the current infrastructure of the city
Preconditions	
Success Guarantee	A simulation should be a trustworthy,accurate and correspond to what happens in reality when the parameters of a simulation occur.

Main Success Scenario	Analyst loads data from a peak traffic situation in the city. Analyst seeks out red areas/bottleneck crossroads of the city during peak hours. Analyst starts a new report project. Analyst tries different scenarios to resolve the bottlenecks. Analyst runs all the scenario simulations. The URBAN MOBILITY SIMULATOR calculates the flow and overhead of the new scenario. Analyst reports the overhead of all scenarios in the tradeoff analysis. Analyst sends trade off analysis to Mr dalpiaz. Mr dalpiaz checks trade off analysis and approves it Mr Dalpiaz present feasible scenarios and report to vice-mayor
Special Requirements	● Certified simulator engine dependency / usation ● load traffic data into system ● Map of city roads, where all roads are colored based on their flow/ throughput. green indicates a good flow. red indicates a bad flow. ● Project file creation ● Single scenario addition to project file ● Multiple scenario addition to project file ● Alteration of as is city infrastructure ● storation of and to be able to save project file ● calculation of flow for a scenario by the urban mobility simulator ● calculation of overhead for a scenario by the urban mobility simulator
Technology and Data Variations List	System uses of a certified simulator engine. System must be able to read sensor data from the city

Scope	URBAN MOBILITY SIMULATOR
Level	User goal
Primary Actor	TRADE OFF ANALIST
Stakeholders and Interests	● Trade off analyst: want a reliable system capable of performing trustworthy and accurate simulations of scenarios. want to resolve a bottleneck of a crossroad.
Preconditions	a bottleneck crossroad
Success Guarantee	A simulation should be a trustworthy,accurate and correspond to what happens in reality when the parameters of a simulation occur.
Main Success Scenario	Analyst loads as-is data from a certain crossroad in the city which need to be improved. Analyst tries multiple variations and changes of the crossroad ● changing traffic light type ● changing the speed limit of the two crossing roads ● changing the crossover to a roundabout ● adding a lane to one incoming road of the crossroad ● removing a lane to one incoming road of the crossroad Analyst calculates the flow and overhead for all variations and changes Analyst report findings and data in the final report
Special Requirements	● different traffic light types which can be interchangeable ● alteration of the speed limit of a road ● alternation of roundabout into a crossover ● alternation of a crossover into a roundabout ● addition of a lane to a road ● removal of a lane of a road ● Flow calculation for a variation ● overhead calculation for a variation
Technology and Data Variations List	System uses of a certified simulator engine. System must be able to read sensor data from the city

Scope	URBAN MOBILITY SIMULATOR
Level	User goal
Primary Actor	TRADE OFF ANALIST
Stakeholders and Interests	● Planner: wants to calculate traffic issues in case of a large event
Preconditions	a large event e.g. a marathon
Success Guarantee	A simulation should be a trustworthy,accurate and correspond to what happens in reality when the parameters of a simulation occur.
Main Success Scenario	Analyst loads as-is infrastructure data Analyst loads normal morning traffic data for Wonderland Analyst adds an estimate of extra traffic from neighbouring cities to the current traffic data. Analyst closes roads where the event takes place Analyst makes certain roads one-way to exclude a congestion in certain roads. Analyst calculates the flow and overhead for the simulation. Analyst report and saves the simulation results.
Special Requirements	● load infrastructure data ● load normal traffic data ● extra cars addition to roads ● closure of a road ● Alternation of the direction of a road e.g. unidirectional vs multidirectional
Technology and Data Variations List	System uses of a certified simulator engine. System must be able to read sensor data from the city