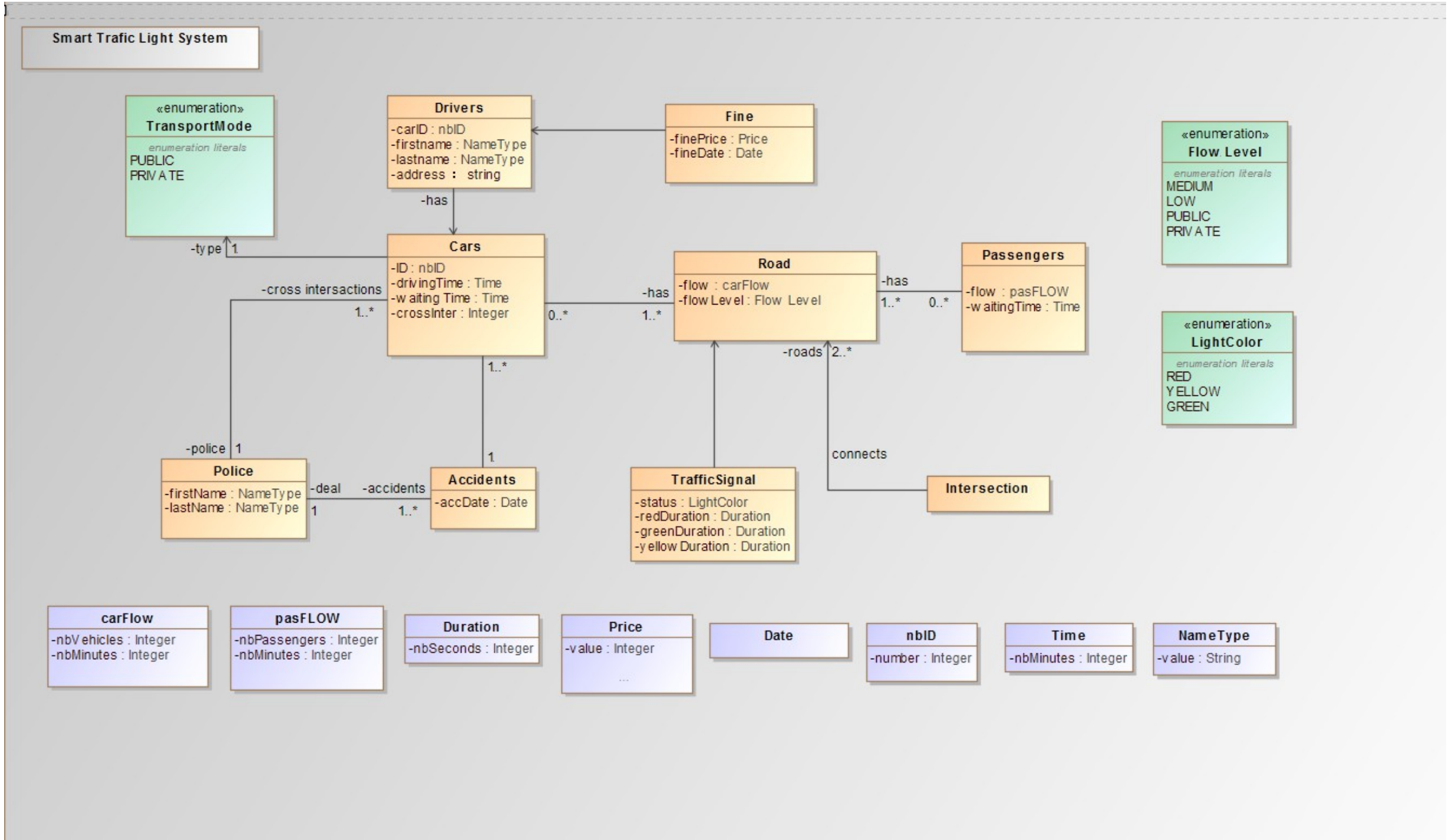
Information System Modeling

YAO ZELIANG


Smart Trafic Light System
«enumeration»
TransportMode
enumeration literals
PUBLIC
PRIVATE
Drivers
-carID : nbID
-firstname : NameType
-lastname : NameType
-address : string
Fine
-finePrice : Price
-fineDate : Date
«enumeration»
Flow Level
enumeration literals
MEDIUM
LOW
PUBLIC
PRIVATE
-has
-type
1
Cars
-ID : nbID
-drivingTime : Time
-waiting Time : Time
-crossInter : Integer
-cross intersactions
1..*
0..*
-has
1..*
Road
-flow : carFlow
-flow Level : Flow Level
-has
1..*
0..*
Passengers
-flow : pasFLOW
-waitingTime : Time
«enumeration»
LightColor
enumeration literals
RED
YELLOW
GREEN
1..*
-roads
2..*
-police
1
Police
-firstName : NameType
-lastName : NameType
-deal
1
-accidents
1..*
Accidents
-accDate : Date
1
TrafficSignal
-status : LightColor
-redDuration : Duration
-greenDuration : Duration
-yellow Duration : Duration
connects
Intersection
carFlow
-nbVehicles : Integer
-nbMinutes : Integer
pasFLOW
-nbPassengers : Integer
-nbMinutes : Integer
Duration
-nbSeconds : Integer
Price
-value : Integer
...
Date
nbID
-number : Integer
Time
-nbMinutes : Integer
NameType
-value : String

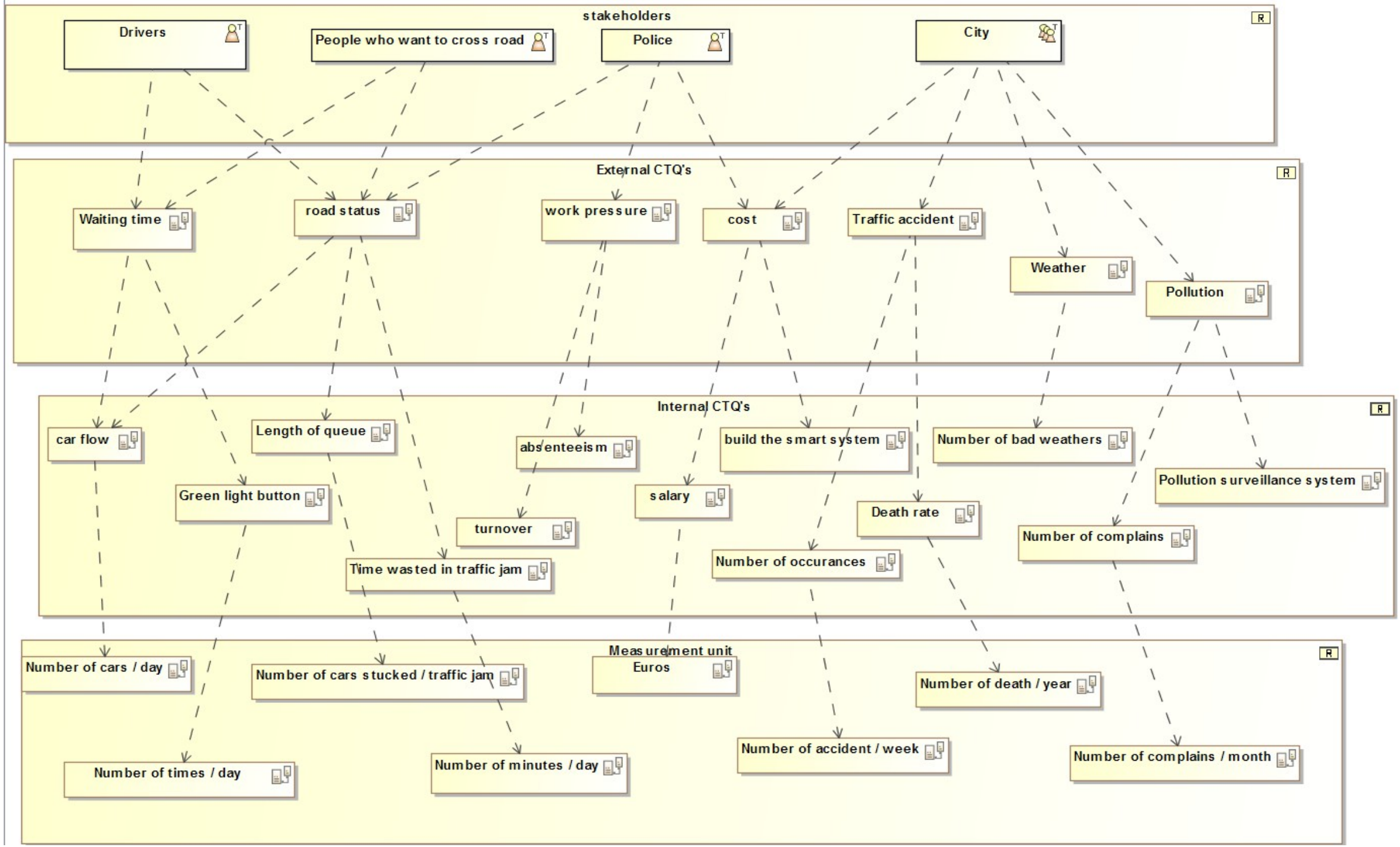
DecisionTable

Car pass the cross road						
Conditions		Red Light	Green Light	Yellow Light	Flow Level	Annotation
CASE 1	1st Road	0’	always	0’	Low	The flow of road 1 is low
	2nd Road	40’	35’	5’	Medium	
CASE 2	1st Road	40’	35’	5’	Medium/High/Low	The 2 roads have the same level of flow, no need to change
	2nd Road	40’	35’	5’	Medium/High/Low	
CASE 3	1st Road	55’	10’	5’	Low	The 2nd road has a traffic problem
	2nd Road	15’	50’	5’	Congestion	
CASE 4	1st Road	55’	15’	5’	Low	Road 1 has a much lower flow than road 2
	2nd Road	20’	50’	5’	High	
People Crossing						
		Red Light	Green Light	Waiting time		Annotation
CASE 1	No cars on the road	0’	always	0’	before press	Person push the button while there is no car on the road the light waits 5s to shift from green to red, 40s later .cars begin to move
		40’	35’	5’	after press	
CASE 2	High Flow	0’	always	0’	before press	Person push the button while the flow is high, because the flow is high, we can’t let cars stop for so long, that’s why we put 20s for
		20’	50’	5’	after press	
Special cars	police car	ambulance	fire car	Always take the right track		
				EMMERGENCY CITUATION)		

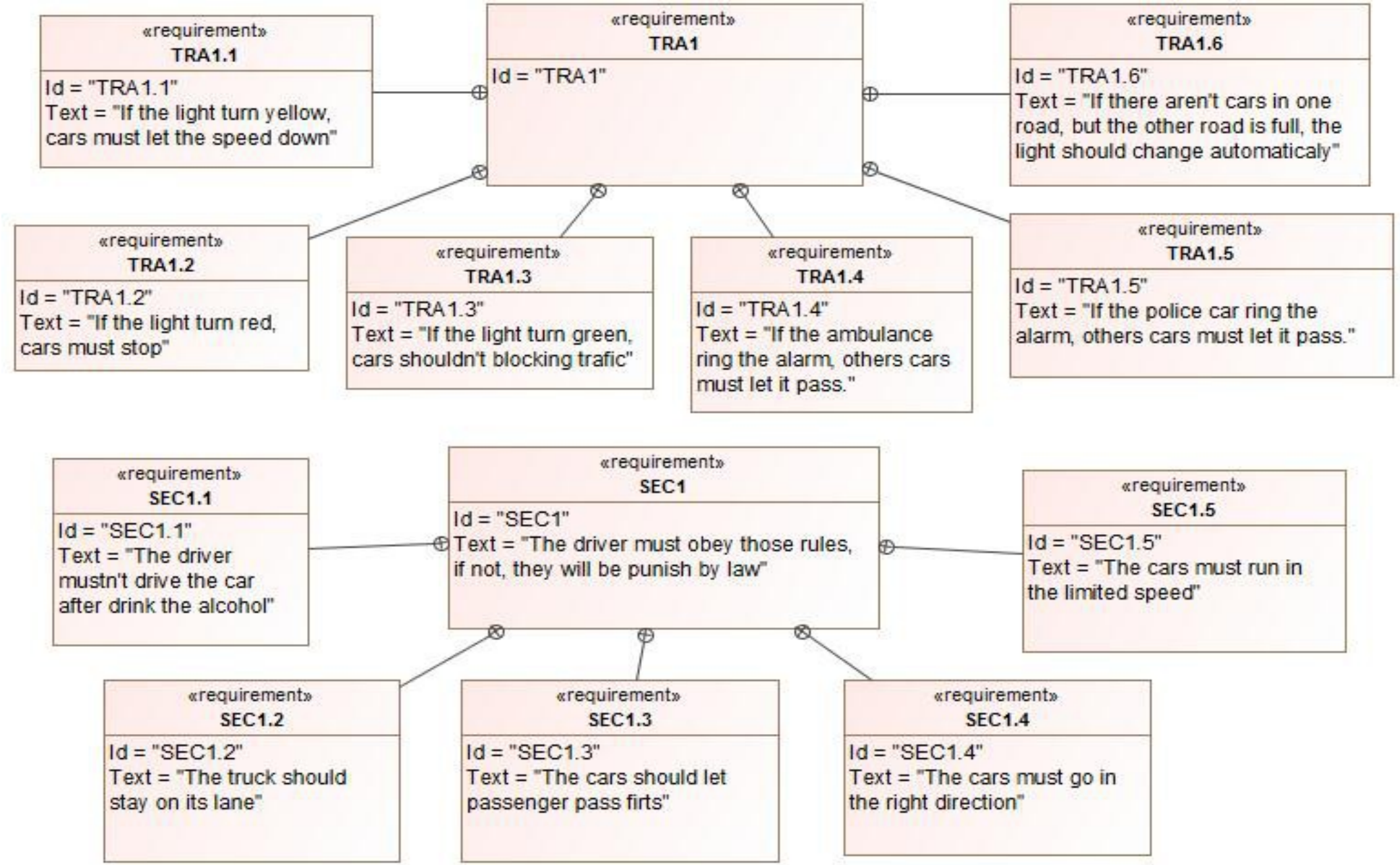
Sheet1

Critical To Quality

Stakeholders	External CTQ's	Internal CTQ's	Measurement unit
Drivers	Waiting time	Car Flow	Number of cars / day
	Road Status	Length of queue	Number of cars stucked / traffic jam
		Car flow	Number of cars / day
		Time wasted in traffic jam	Number of minutes / day
City	Traffic accident	Number of occurances	Number of accident / week
		Death rate	Number of death / year
	Pollution	Number of complains	Number of complains / month
		Pollution surveillance system	Data
	Cost	salary	Wage/month
		build the smart city system	Euros
	Weather	Number of bad weathers	Number of bad weathers / month
People who want to cross the road	Waiting time	Green light button	Number of times / day
	Road Status	Length of queue	Number of cars stucked / traffic jam
		Car Flow	Number of cars / day
		Time wasted in traffic jam	Number of minutes / day
Police	Road Status	Length of queue	Number of cars stucked / traffic jam
		Car flow	Number of cars / day
		Time wasted in traffic jam	Number of minutes / day
	Cost	salary	Wage/month
	Work pressure	turnover	
		absenteeism	


stakeholders
Drivers
People who want to cross road
Police
City
External CTQ's
Waiting time
road status
work pressure
cost
Traffic accident
Weather
Pollution
Internal CTQ's
car flow
Length of queue
absenteeism
build the smart system
Number of bad weathers
Pollution surveillance system
Green light button
salary
Death rate
turnover
Number of occurances
Number of complains
Time wasted in traffic jam
Measurement unit
Euros
Number of cars / day
Number of cars stucked / traffic jam
Number of death / year
Number of accident / week
Number of times / day
Number of minutes / day
Number of complains / month

RequirementCombinaison



RequirementCombinaison

The Business Model Canvas

Designed for:	Designed by:	Date:	Version:

Key Partners

Driver
Police
Passenger
City
Car
Trafic Light

Key Activities

Design the light system
Control the car flow
Deal with the accident

Key Resources

Fund of government
Salary
Investor

Value Propositions

Aim to reduce the number of accidents, make the vehicle trafic smooth, and make the pedestrains safe.

Customer Relationships

The police command drivers and pedestrains

The government give salary to the police

Channels

Smart trafic light system

Autonomous car system

Customer Segments

Drivers
Special vehicals

Cost Structure

Salary for police
Fee for design the light system

Revenue Streams

Fine from the drivers who disobey the rule
Road toll
Sponsorship fee