



Ticket Penalties Project

Information Systems

Stefano Brilli
Stefano Frazoni
Valeria Tedesco
Vincenzo Torcasio





An Italian city Administration has several tasks:

- local laws and environment management
- to guarantee an high level life
- To keep citizens in safety

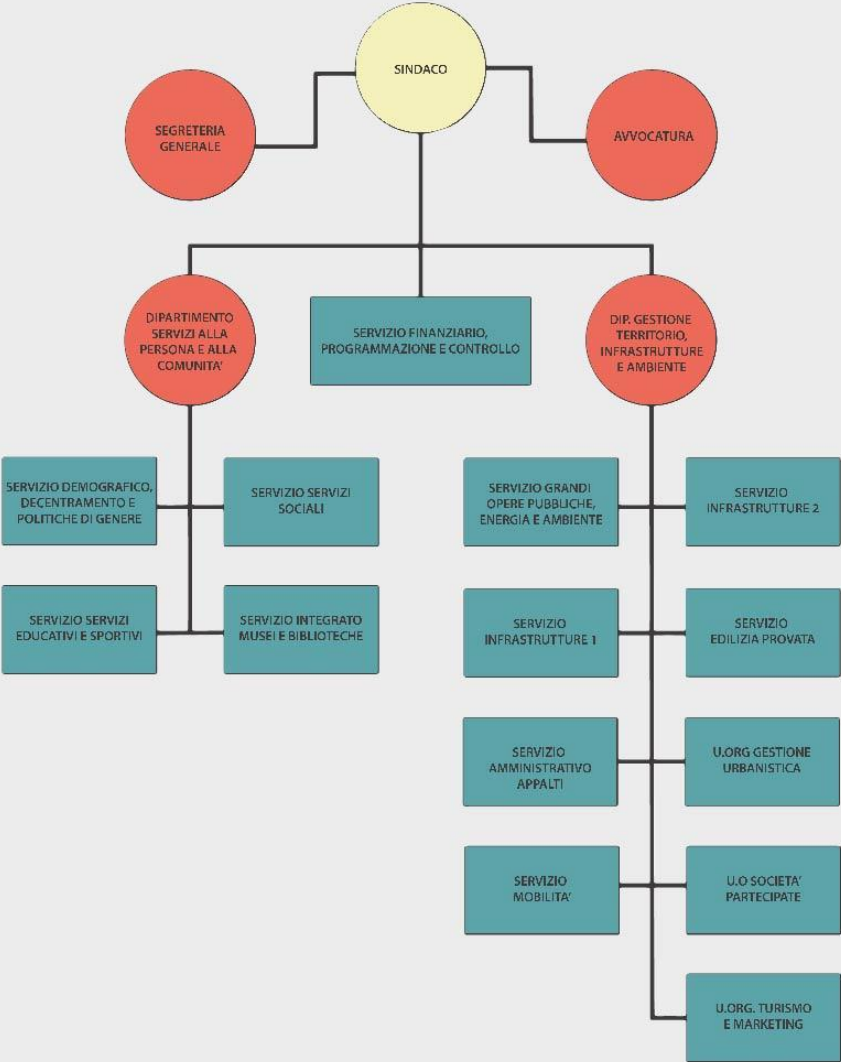
Case Study: Comune di Udine


We will analyze:

- Municipality Organizational structure
- Traffic Penalties and relatives Procecces

MUNICIPALITY

ORGANIZATION STRUCTURE





Goal, Mission and Principles

Goal:

- Culture: sport, education, tourism...
- Handle viability within the perimeter
- Ensure compliance with municipal ordinances
- Guarantee public order
- Improve services

Mission:

- Parkings administration
- Traffic penalties management
- Roads maintenance
- Quick intervention in case of negative events

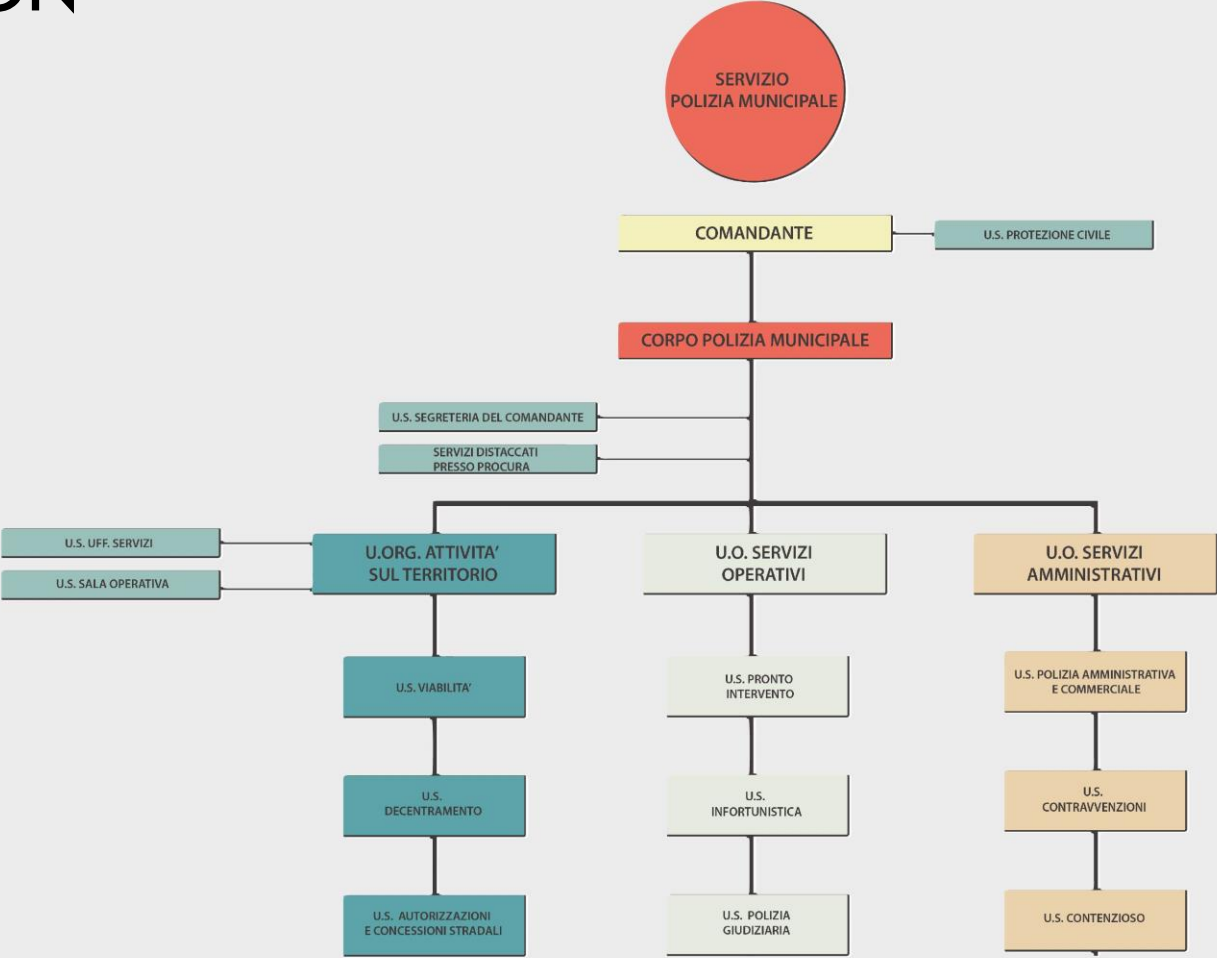
Principles:

- Respect and protection of environment
- Social responsibility
- Transparency
- Community centered
- Providing sense of safety to community



TRAFFIC PENALTIES MANAGEMENT

ORGANIZATION STRUCTURE

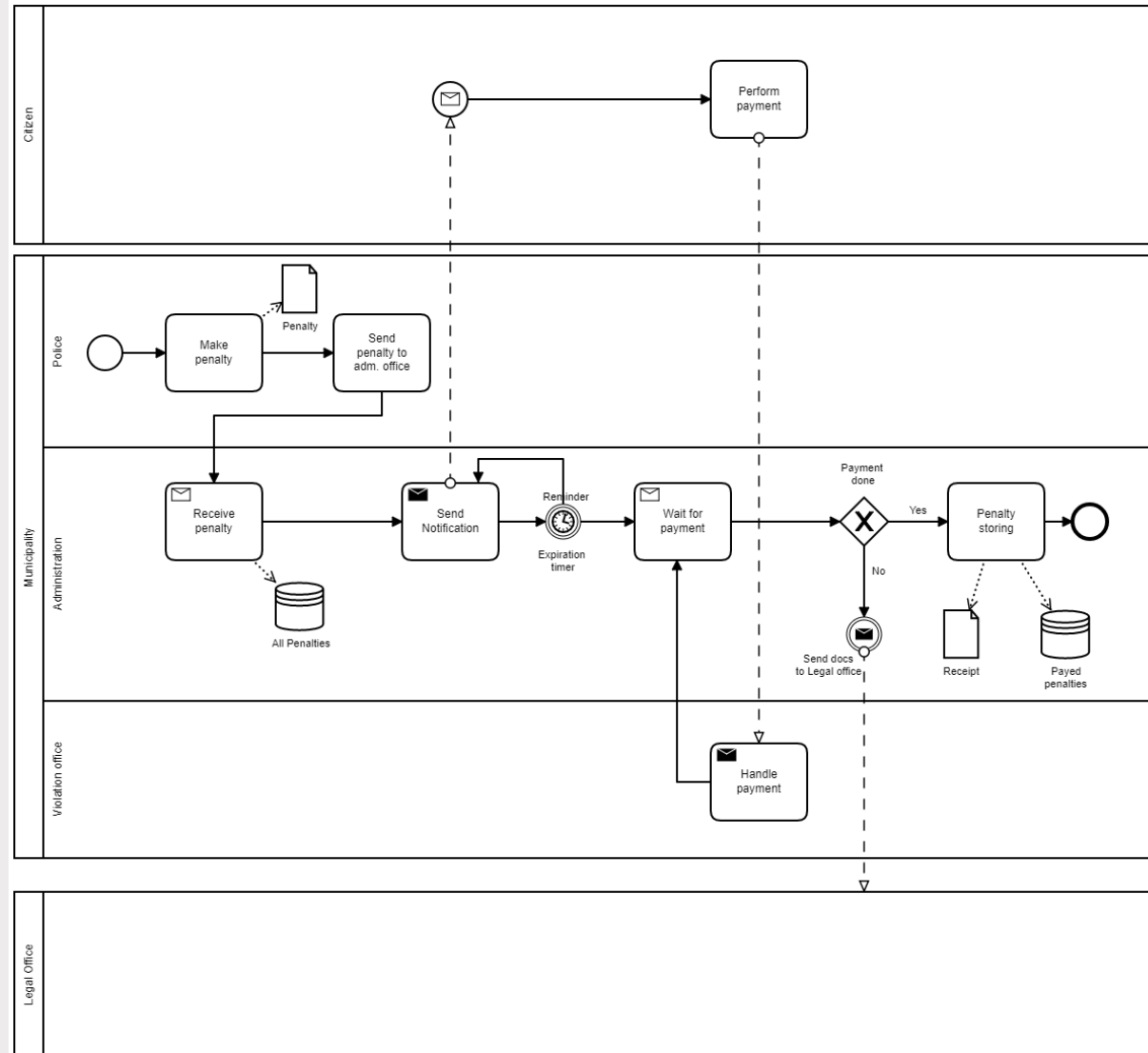




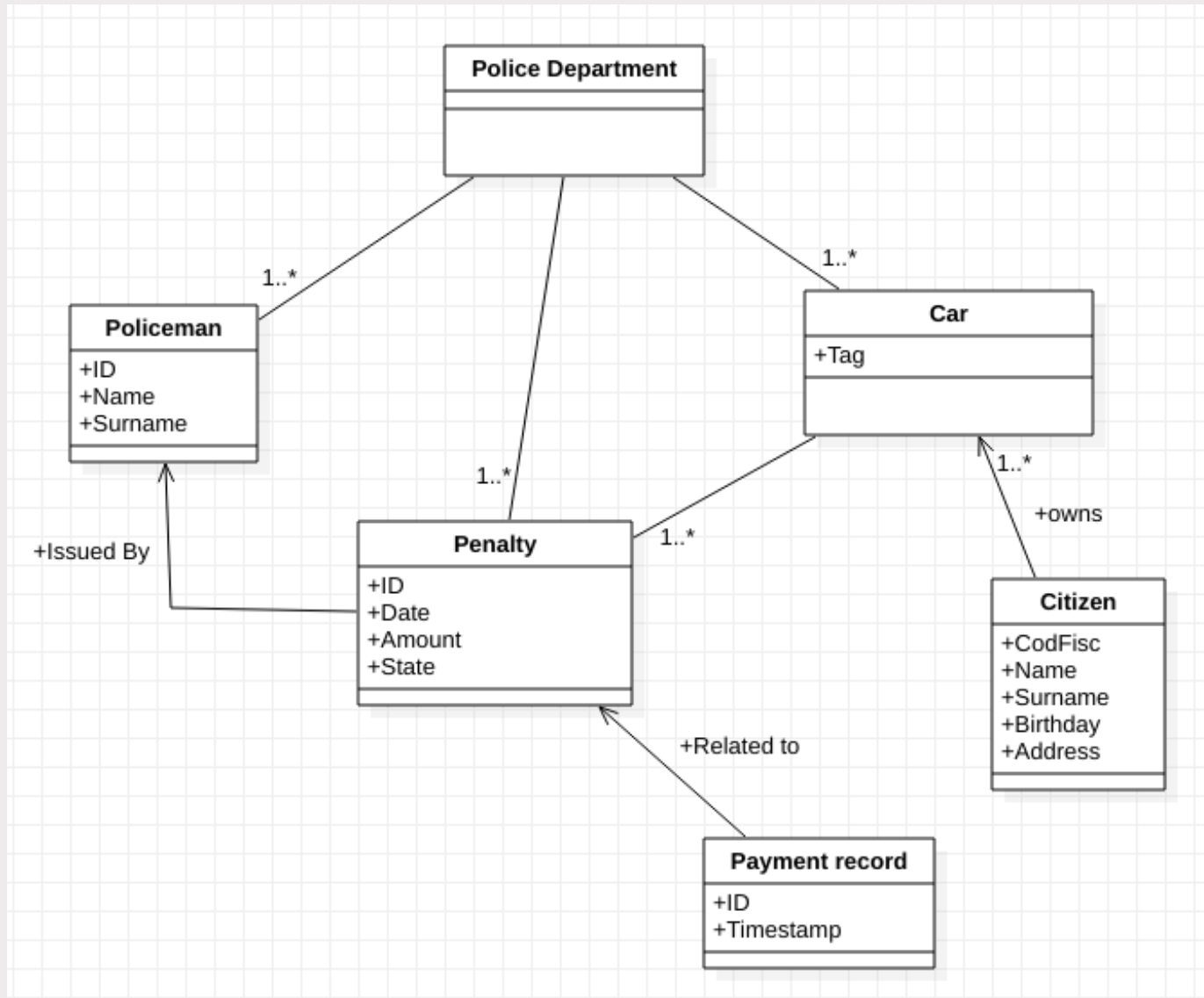
AS IS

- BPMN
- UML

BPMN AS IS



UML AS IS

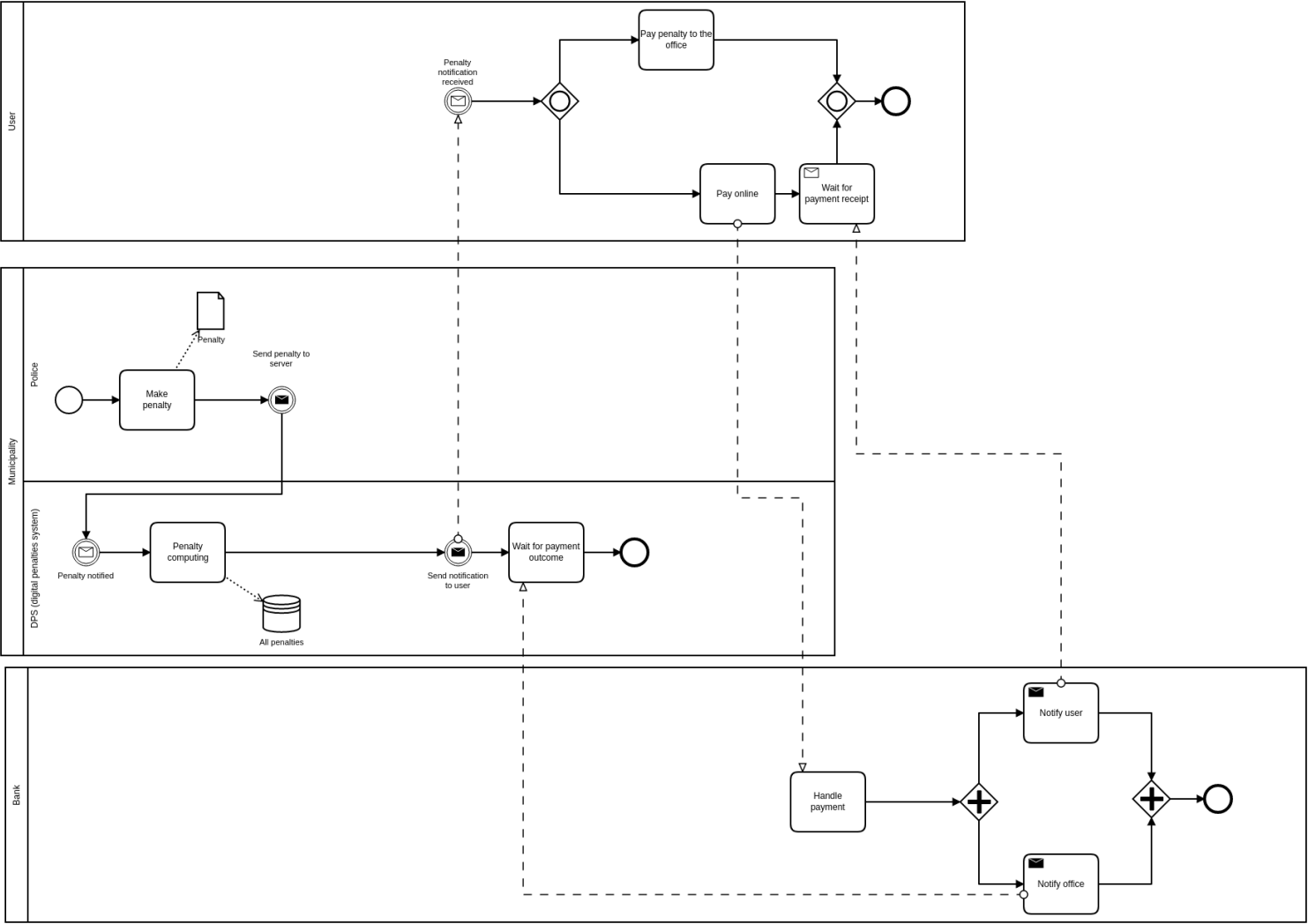




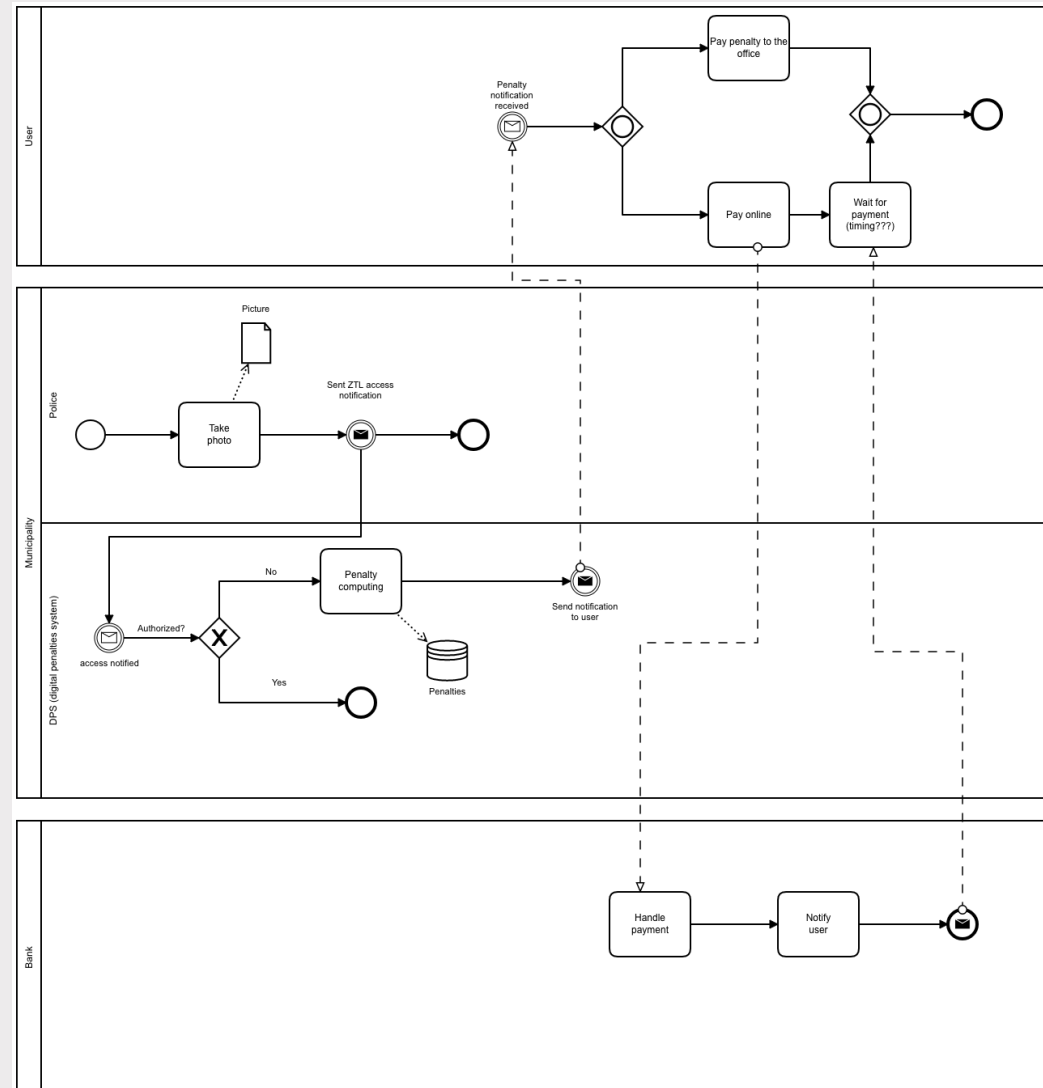
TO BE

- BPMS
 - Process with Policeman
 - Process with camera, ZTL
- UML

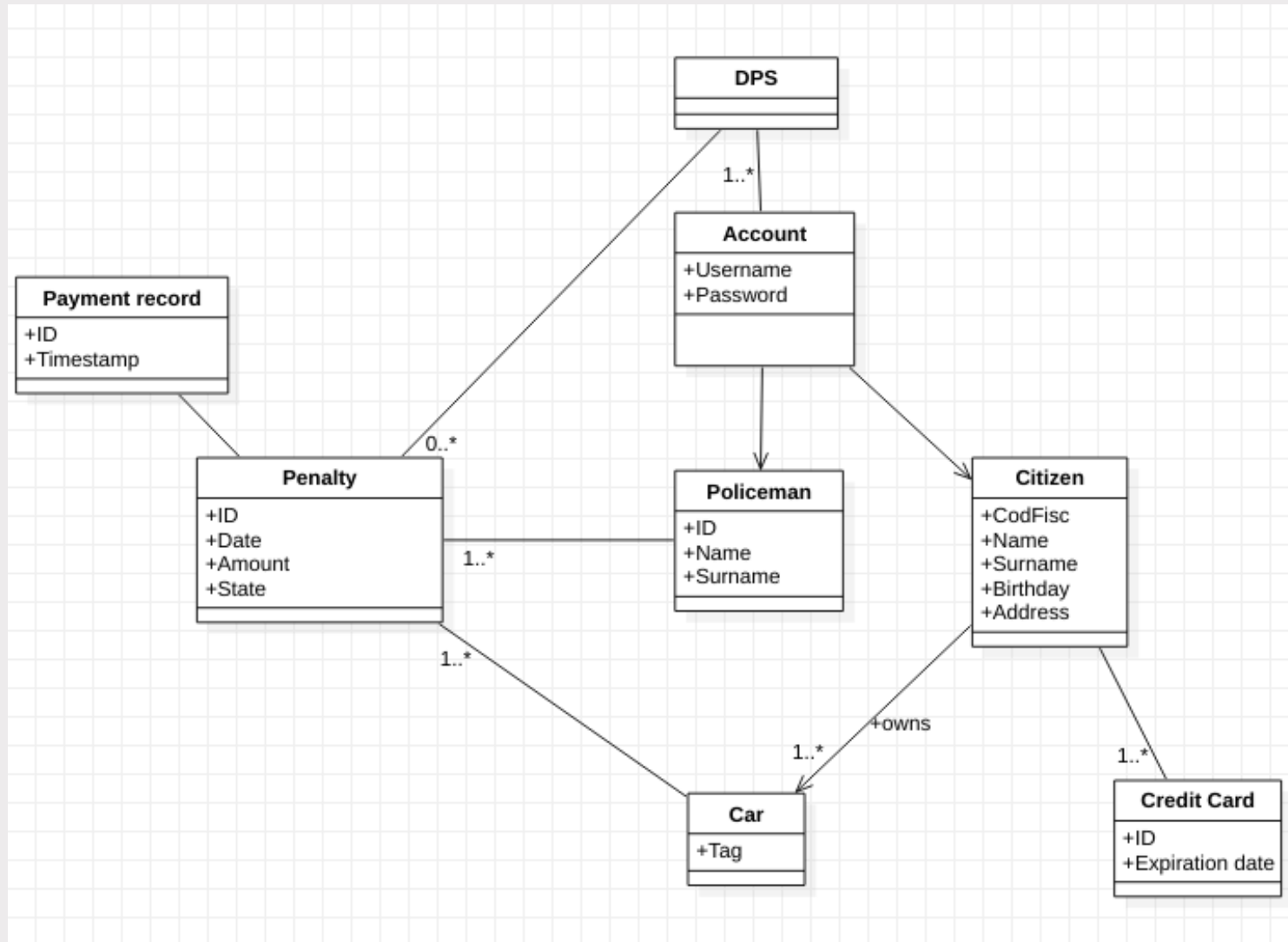
BPMN TO BE



BPMN TO BE - ZTL



UML TO BE



COMPARE
TO BE vs AS IS

KPI

KPI			
CATEGORY	NAME	DESCRIPTION	UNIT OF MEASURE
General	NP	# penalties per year	
	NPP	# penalties paid in time	
	NE	# employees (administration and policemen)	
	NPC	# penalties statute-barred (if it's not notified in 90 days)	
Efficiency	UC	Unit cost per employee per year (salary, maintenance, ..) / NE	€
Service	LT1	Lead time to make a penalty	t
	LT2	Lead time to perform payment	t
Quality	N_ERR1	# errors in filling penalty report / NP	%
	N_ERR2	# amministration errors (lost penalties, ...) / NP	%

ANALYSIS

AS IS vs TO BE

Analysis AS IS vs TO BE		
KPI	AS IS	TO BE
NP		same (it doesn't depend on the developed system)
NPP		may increase (easier user experience: online payment, notification, ...)
NE		may decrease (automatic penalties management system: some people could be fired, some people could be shifted)
NPC		may decrease (instantaneous notification of the penalty)
UC		may decrease (lower costs of utilities, such as toner, paper, ...)
LT1		decrease (policeman enters the penalty directly into the system)
LT2		should decrease (new easier ways to pay: app, website, ...)
N_ERR1		may decrease (no signal, wrong gps signal, ...)
N_ERR2		decrease (automated system: it shouldn't make mistakes)

TCO

TCO	
PHASE	COST
Construction C	Cost of infrastructure, app development
Deployment D	Training of personnel, cost of deployment
Operations and Maintenance O + M	Infrastructure updates, infrastructure maintenances, payment of royalties
Dismissal DS	Uninstall of application, backups and data migration

ROI

ROI					
	Year 1	Year 2	Year 3	Year 4	Year 5
Cost	C + D	-	-	-	-
Cost	-	O + M	O + M	O + M	O + M
Saving	-	UCAsls - UC _{ToBe}	UCAsls - UC _{ToBe}	UCAsls - UC _{ToBe}	UCAsls - UC _{ToBe}



***Why TO BE situation is
better ?***





PROS

- Saving material costs (paper, ink and so on)
- Saving expenses related to administration costs (employee, infrastructure and so on)
- Improve User Experience of Customer/Employee sides

CONS

- Saving of first two years are negative, due to development, deployment, testing and personnel training costs

CONCLUSION

We can conclude that the investment makes sense. In fact, even if the first operative years are characterized by costs greater than revenues, savings become important later and they justify the initial costs.



POSSIBLE IMPROVEMENTS

- Buying custom devices with custom firmware for each policeman. Doing so, company could adapt new features according to new needs;
- Integrating other services of public administration, such as checking the validity of public transportation service, a more quick communication between policemen and so on;

THANK YOU