Information Systems 01PDWOV

18 June 2014

Books, notes are not allowed. Write only on these sheets.

Passport issue

The AS IS process to issue a passport to an Italian citizen is as follows. The citizen pays euro 42 to the Ministry of Interior using a post account (this requires visiting a post office), makes a paper picture of herself, and finally visits any police office (the police is under the control of the Ministry of the Interior). At the police office an officer identifies the citizen (this requires another ID, like identity card or driving license), checks the picture, collects the proof of payment for euro 42, collects fingerprints of the person. The officer enters all required data (scanned picture, scanned fingerprints, citizen data) in a dedicated application and requests the passport. Later, another office in the police checks in a central database if the citizen has right to having a passport (this depends on pending or past criminal convictions and so on). If everything is ok the passport is physically produced and sent to the police office. The citizen then collects the passport. The procedure as is lasts 25 calendar days.

Design a TO BE process that is faster and more convenient both for the police and for the citizen.

In the following, analyze and model in detail the TO BE situation.

1   IT Model / Technological model: describe the hardware architecture of the system

Client server.
Client: front office 2 devices: fingerprint collector and camera, printer (to print passports)
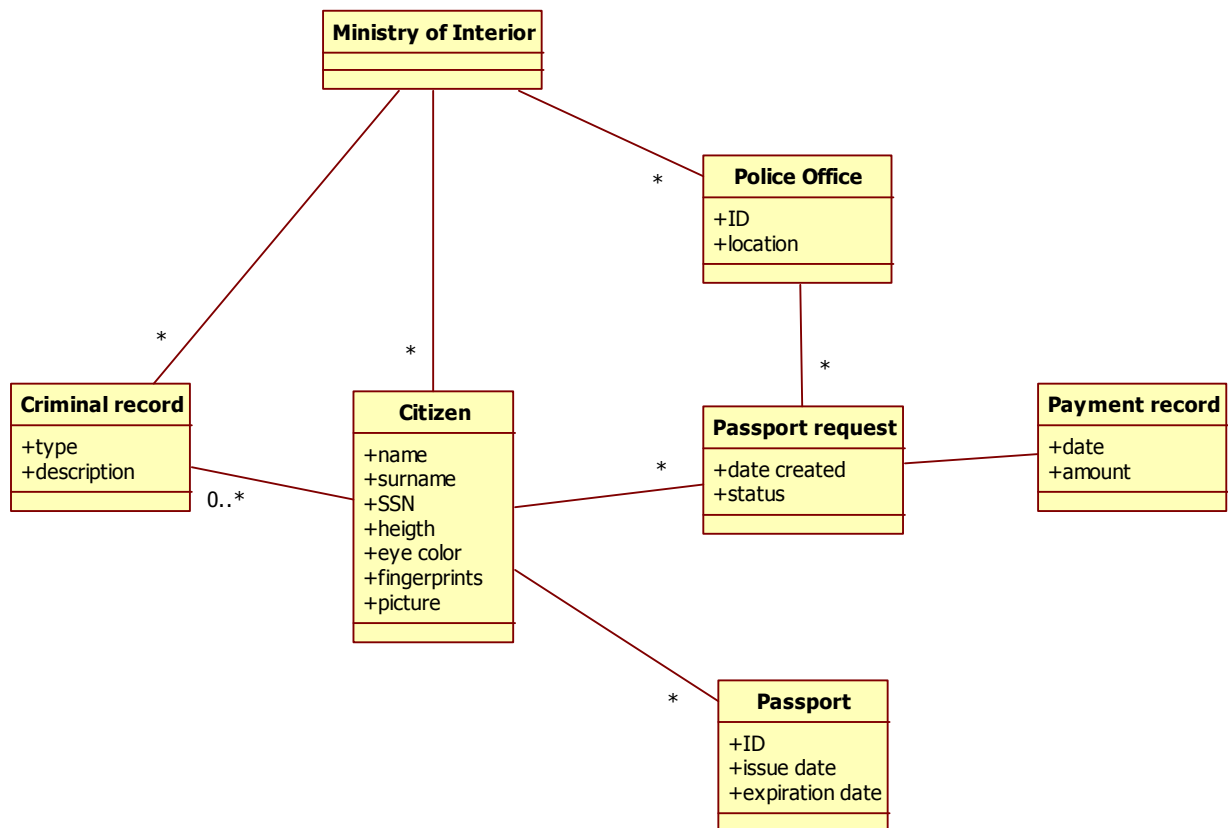Server: database of citizens, database of criminal offences

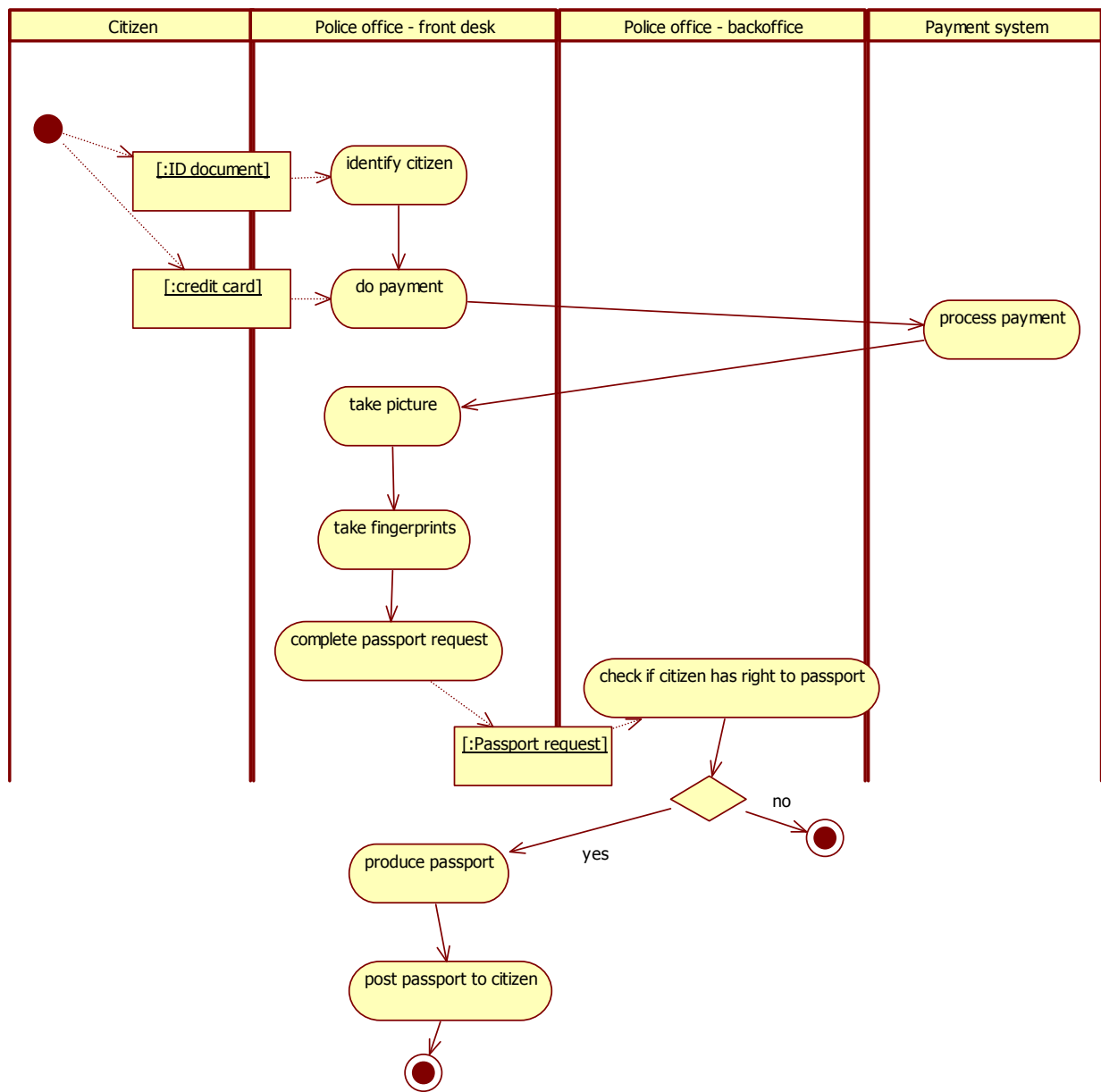2   Organizational model: list roles or organizational units involved

Citizen, police-front office, police- back office
Payment system (banking system)

We assume that the passport is produced (printed) in police front office. Another option is that the passport is produced by a specialized company and then sent to front office / citizen

3 Functional model: Design and model (using UML activity diagrams with swimlanes + class diagram) the process to issue a passport.

Ministry of Interior

Police Office
+ID
+location

*

Criminal record
+type
+description

0..*

Citizen
+name
+surname
+SSN
+heigth
+eye color
+fingerprints
+picture

*

Passport request
+date created
+status

*

Payment record
+date
+amount

*

Passport
+ID
+issue date
+expiration date

Citizen	Police office - front desk	Police office - backoffice	Payment system

[:ID document]

identify citizen

[:credit card]

do payment

process payment

take picture

take fingerprints

complete passport request

[:Passport request]

check if citizen has right to passport

no

yes

produce passport

post passport to citizen

4   Define the KPI, considering as strategic goal 'improvement of service for citizens and police'

Category (General, cost ..)	Name	Description	Unit of measure
GEneral	N_R	Number of passport requests per year	
	N_P	Number of passports issued per year	
Cost	C_P	Cost to process one passport request	
Service	LT_citizen1	Lead time, from passport request creation to passport delivery	
	LT_citizen2	Lead time, time passed by citizen in any activity related to obtaining passport	

5   Compare the previous and the current situation, using the KPIs defined above

KPI	AS IS	TO BE
N_R	No change	
N_P	No change	
C_P		Front office: probably same for picture and fingerprints, add time for payment Back office checks: no change
LT_citizen1	25 days	Could decrease
LT_citizen2	LT in post office, LT to make picture, LT in police office for request, LT in police office for collection	LT in police office for request Should decrease drastically

6   Define the TCO (time span: 4 years) for the TO BE situation

Phase	Cost factor	Cost estimate
Construction	IS of police already exists. This work is mostly about modifying parts of the existing IS to change Web cams (for pictures) must be bought Link with bank system must be added	
Deployment	Install web cams in each police office Train officers	
Operation	No meaningful change to current IS operation	minimal

7 List pros and cons when switching to the TO BE situation. Discuss quantitative (especially cost) and qualitative pros and cons

Pro	Con
LTs for citizens	Investment (web cams and changes to existing IS)

From PRO vs CON analysis is the TO BE situation better? (answer Yes or No):
Why? Yes

Main advantages are for the citizen (LT spent in offices /lines greatly reduced). C_P could increase (both for investments and more effort to manage payment).

8 (1 point) What are the main processes in the process industry (oil, chemical products) domain?

9 (1 point) What are the key points of the ERP model?

10 (1 point) Provide an example of a divisional company, and graphically sketch its divisions.

11 (2 points) Consider a company that produces processed food (ex. canned meat, snacks). Define, using the Balanced Score Card (BSC) approach one meaningful indicator in each dimension of BSC.