Matricola_____
Surname_____
Name:_____

Information Systems 01PDWOV

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

A car insurance policy is usually mandatory for car drivers. The policy protects the driver in case of an accident with damage to another car. In this case the insurance company pays the damage, instead of the driver.

The main phases of the process to manage a damage claim (== request of payment for a damage) are described in the following. Drivers D1 and D2 had an accident, D1 is insured with company I1, D2 is insured with I2. Let's assume that D2 was responsible for the accident, so company I2 should pay D1 for the damage. Let's assume that there is no damage to people.

Open claim. D1 opens a damage claim, which contains info about the two cars involved in the accident, the two drivers, D1 and D2, I1 and I2, the context of the accident. The claim is sent to I2.

Damage evaluation. I2, in the person of a damage evaluator P (working in damage evaluation office of I2), inspects the car of D1 and computes the expense to repair it. This amount is computed considering labour and spare parts to repair the car. Labour times for standard repairs (ex dismount door, mount door, etc) are provided by the car manufacturer. P takes pictures of the car for documenting the damage and attaches them to the file. I2 proposes the amount to D1, some negotiation can happen, possibly involving the evaluation office of D2 on one side and D1 (or a lawyer representing him) on the other side.
Constraint1: P needs to inspect the car, either at the premises of D1, or at the place where the car is (in case of big accidents the car can't move).
Constraint2: in any case the amount to repair the car cannot exceed the commercial value of the car at the time of the accident.

Close claim. Upon agreement on the damage amount, the parties (D1 and I1, I2) sign an agreement, I2 pays the amount to D1, the claim is closed.

Issues to be considered in the process. **Fairness** of the evaluation. The amount to be paid should be fair, not too low, not too high. **Speed** of the evaluation. D1 cannot use the car, either until the inspection by P, or until repair (in case of bigger damages). Therefore the longer the process, the more D1 is subject to inconveniencies. **Frauds** It happens that claims are opened for false accidents, or the damage is exaggerated, then the excess money is divided between P and D1 and D2.

In the following, design and model a claim process (TO BE situation) managed by an insurance company. Aim at a best compromise to satisfy all parties involved. Options experimented in the past are: all the process is managed by I1, if D1 is the driver to be reimbursed (at the end of the year companies pay each other the balance of reimbursements paid / received). Or, the process is handled both by I1 and I2. Or the evaluation is subcontracted to a company that works for many insurance companies. Or, the damage evaluation is subcontracted to a few mechanical shops that are selected by the insurance company, and controlled by inspectors of the insurance company.

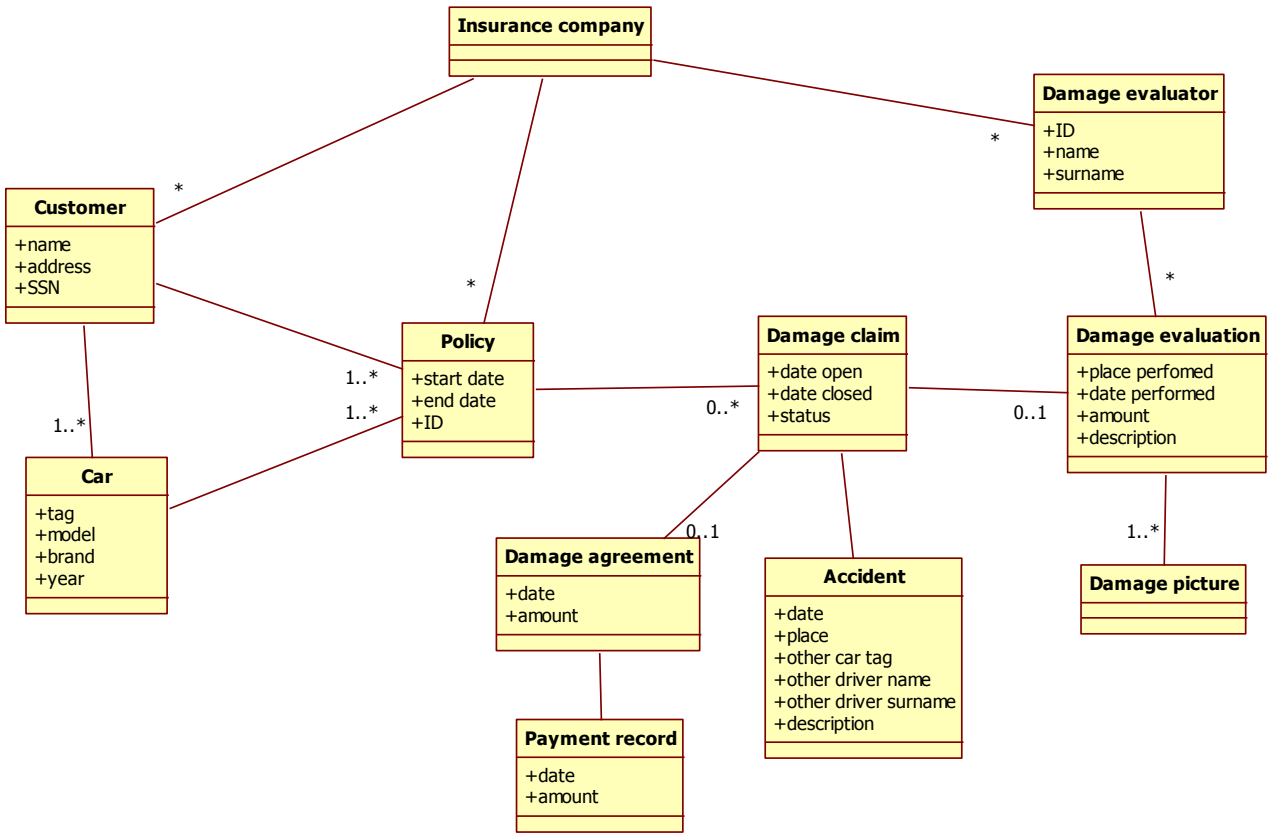
1 IT Model / Technological model: describe the hardware architecture of the system

Client (smartphone, tablet, PC) server (web server/ db server of the insurance company, possibly server of the company managing the damage evaluation subprocess, if this is outsourced)

2 Organizational model: list roles or organizational units involved

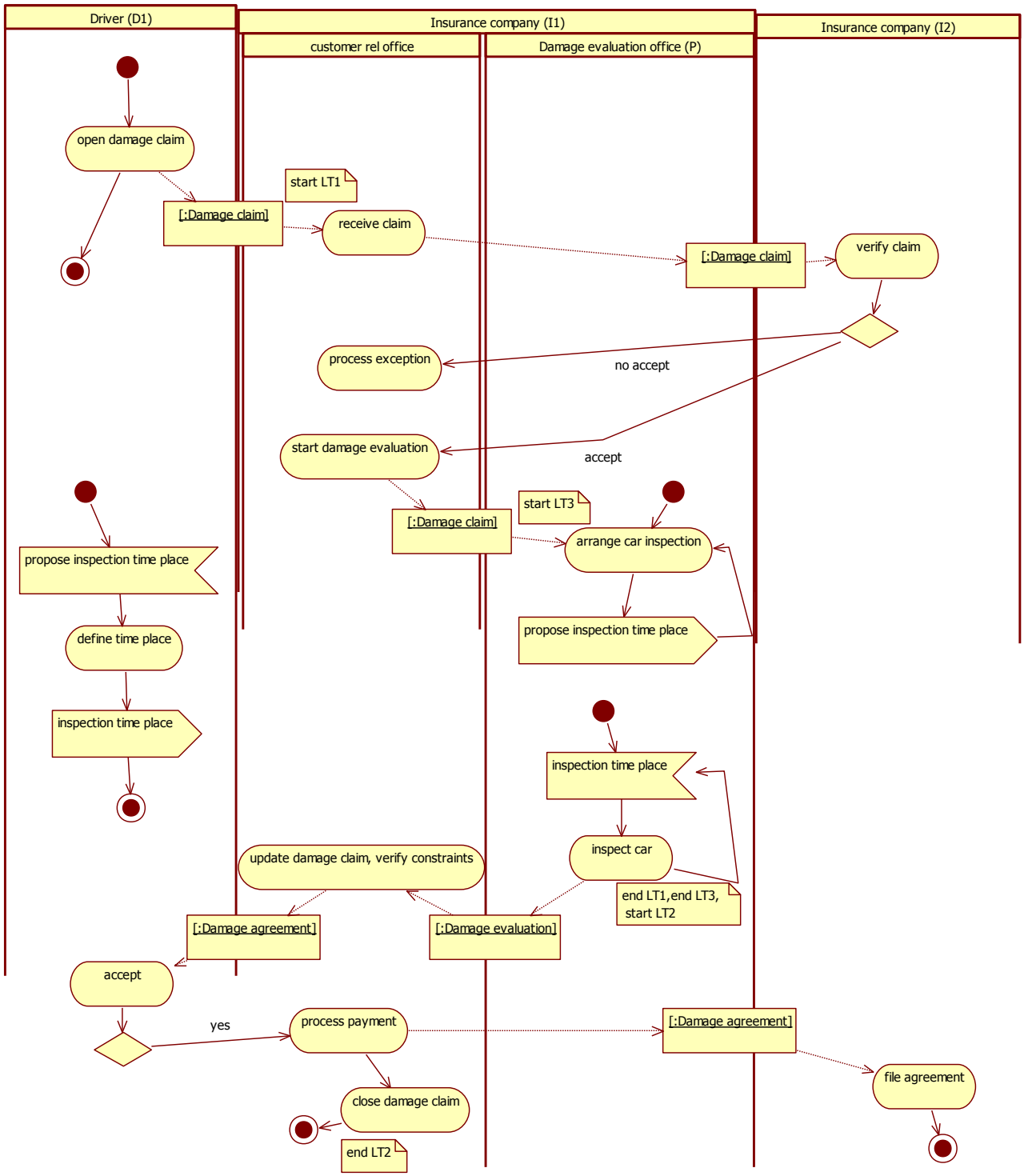
Insured person, Insurance company (sub roles: inspector, damage evaluator, payment office) (possibly company managing the damage evaluation subprocess, instead of damage evaluator role)

3 Functional model: Design and model (using UML activity diagrams with swimlanes + class diagram) the claim process (subdividing it as needed in subprocesses)



The insurance policy (class Policy) represent the agreement (insurance) between a car owner and the insurance company. It is essential in the model, and must exist before the process starts. The Accident class contains info on the accident – it could also be merged with the damage claim class. Both represent the start of the process. A common mistake has been to repeat classes Car / Customer /Insurance (since there are two of each involved in the accident). This is wrong (think at the case of an accident between two cars insured by the same company), if needed relationships can be used (see Airport UML exercise, relationships departs / arrives). Damage evaluation is the next step, and contains the amount to cover the damage. Damage agreement and Payment represent the final step of the process.

Choices for the process: D1 submits claim to I1. I1 uses internal office for damage evaluation. (Other possible choices: D1 submits claim to I2. I1, I2 use external company for damage evaluation)



4 Define the KPIs, considering these high level business goals (or CSF), CSF1 minimize cost of the reimbursement process, CSF2 minimize cost of reimbursements, (goals for the insurance company), CSF3 maximize satisfaction (for the insured customer). In the table below show the correspondence CSF – KPI

CSF name	KPI Category (General, cost ..)	KPI Name	KPI Description	Unit of measure
-	General	#DC_O #DC_C	Number of damage claims opened per year Number of damage claims closed per year	- -
CSF1	Efficiency	C_RP	Cost of reimbursement process. Includes cost of labour of insurance employees and infrastructure. Does NOT include the cost of damage reimbursed	Euro
To monitor process if outsourced	Efficiency	C_DE	Cost of damage evaluation. Labour and infrastructure to evaluate damage (is NOT cost of damage reimbursed)	Euro
CSF2	Efficiency	C_D	Average cost (over one year) of damage reimbursed	Euro
CSF3	Service	LT1	Calendar time from claim opened to damage evaluated by P	time
CSF3	Service	LT2	Calendar time from damage evaluated by P to claim closed (and payment received by customer)	Time
To monitor process if outsourced	Service	LT3	Calendar time from damage evaluation requested to damage evaluation completed	time
CSF3	Service	LT_claim	LT1 + LT2	Time
	Quality	CNF_claim	Conformity of damage evaluations = #damage evaluation with amount within 10% of correct amount / #DC_C (possible definition of fairness in the text) (could be evaluated by inspectors on a sample of claims)	%

5 Discuss choices in your process, and how they influence CSFs and KPIs

Claim by D1 managed by I1: since D1 is customer of I1, I1 should try to process it faster (shorter LT_claim). On the other hand, since I2 pays the damage, while I1 evaluates, this could end up in higher evaluations (C_D higher)

Claim by D1 managed by I2: LT_claim could last longer (since D1 is not customer), C_D could be lower (I2 has interest to reduce it as much as possible).

Insource vs outsource damage evaluation: see question 8

7 (2 point) Assume that the process dealing with the inspection of damaged cars and definition of a fair reimbursement amount to repair a damage is outsourced from an Insurance company to an external company. Define 3-4 SLA to control the outsourced process.

C_DE (in case of outsourcing this is the fee paid to the outsourcing company for one evaluation)

LT_3

C_D (this SLA is monitored over time – an increase can be an indicator of frauds)

8 (1 point) What are pros and cons, from the point of view of the Insurance company, in outsourcing the process? (question above)

Pros: possibly C_DE lower, because of economy of scale
Con: less control on the process, C_D could increase because of frauds, LT_3 could increase. The know how on the damage evaluation is lost. This is not a strategic business process, however a badly managed process reduces customer satisfaction and, on the long run, the business.

9 (1 point) An insurance company is organized as follows: a holding company owns three other companies: OnlineI proposes and sells only online car policies; TraditionalI proposes and sells life and car policies through a network of sales offices throughout Italy; DamageE performs damage evaluations, for OnlineI, for TraditionalI and for any other insurance. What kind of organization is using this company?

Divisional (one for online sales, one for traditional channel sales, one for damage evaluations). DamageE could also be seen as a function common to the divisions.

10 (1 point) ~~Consider the Insurance case of exercice 1~~. Consider a telecom operator (Vodafone, TIM, Wind or similar). What are the main high level business processes they have to set up and operate?

See slides, T model, vertical (primary) processes in Telco.

11 (1 point) Consider the Insurance company of exercice 1. What are the main high level business processes they have to set up and operate?

See slides , T model, vertical processes in Insurances: Operations, marketing and sales, after sales service (damage processing is here)

12 (1 point) Consider the Insurance company of exercice 1, and the processes listed in exercice 11. For which processes would you recommend outsourcing IT support, and why?

IT at level of infrastructure in principle could be outsourced (no strategic know how), but there are risks about breaks on operational business data and customer data.

IT at level of IT applications could be outsourced with less risks.
A reasonable compromise would be using commercial applications for all processes (Operations, marketing and sales, after sales service) on a private cloud leased by an external contractor.