



## Politecnico di Milano

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### Workgroup and Workflow Management Systems-Written Test of Jul. 3<sup>rd</sup>, 2008

Family name \_\_\_\_\_ First name \_\_\_\_\_ Politecnico ID # \_\_\_\_\_

Master Course in \_\_\_\_\_

*Please, fill in this sheet carefully.* All answers must be provided on this sheet, which must be returned at the end of the test. No additional sheet will be considered<sup>1</sup>.

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**Rules.** The examination is passed if the student obtains at least 13 points out of a total of 25 points available for this test, and the grand total of obtained points, including those obtained with a presentation or a project, is greater than or equal to 18. Use of books, handbooks, lecture notes is not permitted: only the sheets provided by the teacher can be used. All the questions must be answered, at least partially: tests in which even one question has not been answered will not be evaluated. Duration of the test: 2 hours.

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### Exercises

(1) Describe the main steps of the workflow design methodology.

space reserved to your answer

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<sup>1</sup>**Remark.** Complete specifications whenever needed. Clarity and order will be taken into account for the evaluation.

(2) The *FuelYourCar* company installs natural gas plants that enable car drivers to use either natural gas or gasoline as fuel. The company has thus to manage the following process.

After having agreed a date, the customer reaches the company and checks in, leaving the car, the circulation booklet and the ID card. A secretary makes xerox-copies of these documents and starts a new case. The customer agrees a pickup date and leaves the company going home.

As soon as an engine-technician is available, he performs a checkup of the car, to consider if it is currently suitable for the installation of the natural gas plant. If no defect is detected, which could impair the final approval by the supervisor of the Car Registry, the installation starts: otherwise, the secretary calls the customer to be authorized to perform the required interventions before the installation can start. If the customer refuses the interventions, the customer will pick up the car along with the documents, at no charge. If the customer accepts the required interventions, the costs will be billed to the customer by a detailed itemized list.

While the natural gas plant is being installed, a secretary prepares the final invoice and some temporary documents which enable the car to circulate, while the Car Registry prepares the new circulation booklet.

Once a week, a supervisor from the Car Registry visits the company to validate the installed plants, by the help of an engine technician. We assume that all the plants will be approved by the supervisor, who signs the documents prepared by the secretary.

Finally, the customer goes back to the company, pays all the interventions - if any - and the installation of the natural gas plant, and picks up the car. The Car Registry will then send the final circulation booklet to the company, which will inform the customer to come in and get it.

Provide a reasonable schema of the outlined process(es), according to one of the following modeling formalisms: WIDE model, Workflow Management Coalition model.

(3) With respect to the process described in Exercise 2, provide a reasonable example of the information model, including some temporal information such as valid time or transaction time.

space reserved to your answer - exercise 3

space reserved to your answer - exercise 2

(4) Describe the concept of iterative join of the WIDE process model and its mapping on the process model of the Workflow Management Coalition.

space reserved to your answer

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This part for use by the teacher, only.

Ex. 1	Ex. 2	Ex. 3	Ex. 4	<b>Total</b>

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