**Empirical Study: On Paper – Software Modelling**

**Guide to the Experiment**

***You will be given the following sheets:***

* A pre-questionnaire
* Modelling task for case study 1
* Modelling task for case study 2
* A questionnaire for case study 1
* A questionnaire for case study 2
* A final post-questionnaire

***Your tasks:***

1. Fill in the pre-questionnaire.
2. Write the start time.
3. Carefully read the whole description of the first case study.
4. Imagine being an analyst and creating goal, role and domain models for the requirements of the first case study by using the first modelling approach, as detailed as possible.
	* Follow step-by-step the system description.
	* Please, try to remember the relative time used for the different modelling activities you perform.
5. Write the end time.
6. Answer to the questionnaire.
7. Repeat step 2 to 6 for the second case study by using the second modelling approach.
8. Fill in the short post-questionnaire.

Thanks you.

Assigned to you:

1. Case Study for Personalised Emergency System (PES)
2. Case Study for Meeting Scheduler System (MSS)

**Start Time: \_\_\_\_\_\_\_\_\_\_ End Time: \_\_\_\_\_\_\_\_\_\_**

**Case Study 1: Meeting Scheduler System**

**System Story:**

The aim of this system is to provide a computer based meeting scheduler service that supports the setting up of meetings. The requirements for this system state that for each meeting request, the meeting scheduler should try to determine a meeting date and location so that most of the intended participants will participate effectively. The system would find dates and locations that are as convenient as possible.

The meeting initiator would ask all potential participants for information about their availability to meet during a date range, based on their personal agendas. This includes an exclusion set – dates on which a participant cannot attend the meeting, and a preference set - dates preferred by the participant for the meeting.

The meeting scheduler comes up with a proposed date. The date must not be one of the exclusion dates, and should ideally belong to as many preference sets as possible. Participants would agree to a meeting date once an acceptable date has been found.

**Modelling Task:**

Try to model the requirements for the Meeting Scheduler System (PES) as detailed as possible, following AOM4STS methodology, starting from the goal model of the PES, followed the domain model.

Feel free to ask us questions on modelling constraints.

Model the system requirements step-by-step following the system story. When modelling, interpret the requirements freely. There is no “right” or “expected” solution to which your models have to conform.

**Start Time: \_\_\_\_\_\_\_\_\_\_ End Time: \_\_\_\_\_\_\_\_\_\_**

**Case Study 2: Personalised Emergency System**

**System Story:**

The aim of this system is to support a person, generally an older person, to remain living at home longer. Emergency systems typically have the following two features: (i) an emergency alarm: the older person can raise an alarm if he/she requires emergency attention by e.g. pushing a button on a pendant worn around his/her neck or wrist; and (ii) a wellbeing check: the older person informs a service provider that he/she is well, on a daily basis, via e.g. pushing a button on a base station.

If no indication of wellbeing is received during a specified period, the service provider initiates checks on the older person. The emergency system is installed in an older person’s home, and a service provider monitors data from the system. If the older person raises an alarm, the service provider contacts the person to ask if he/she requires help, or to check that the call is not a false alarm (accidental triggering of the alarm).

If the service provider fails to make contact, or makes contact but the older person is in need of help, the service provider calls a nominated relative or friend to provide assistance, and ultimately, emergency services (e.g. ambulance) is provided if none of the nominated contacts can attend.

For the wellbeing check, the older person is required to register their wellbeing each day, generally within a fixed period, e.g. 7am–11am. If the older person do not check in by the end of the period, the service provider calls the older person. In most cases, the older person has simply forgotten to press the button. If the older person cannot be reached, a similar process as for raising an emergency is initiated.

**Modelling Task:**

Try to model the requirements for the personalized emergency system (PES) as detailed as possible, following the AOM4STS methodology, starting from the goal model of the PES, followed by the domain model.

Feel free to ask us questions on modelling constraints.

Model the system requirements step-by-step following the system story. When modelling, interpret the requirements freely. There is no “right” or “expected” solution to which your models have to conform.

**Questionnaire for Case Study 1 – Meeting Scheduler System**

**Post-modelling questions:**

How much % of the time did you approximately spend in:

Reading the AOM4STS methodology description: \_\_\_\_\_%

Reading and understanding the case study: \_\_\_\_\_%

Modelling the case study: \_\_\_\_\_%

**1 – Strongly agree 2 – Agree 3 – Not certain 4 – Disagree 5 – Strongly disagree**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | The description of the case study was clear to me |

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| 2. | I had no difficulties in modelling the goal model |

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| --- | --- | --- | --- | --- |
|  1 |  2 |  3 |  4 |  5 |

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| 3. | I had no difficulties in modelling the domain model |

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| 4. | I had enough time for accomplishing the modelling task |

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| 5. | Goal decomposition was very useful in this task |

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| 6. | The concept of AOM4STS methodology were detailed enough to model the  |
|  | requirements of the system. |

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| 7. | The effort of modelling seems too high for an efficient use of the methodology in  |
|  | practice. |

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**Questionnaire for Case Study 2 – Personalised Emergency System**

**Post-modelling questions:**

How much % of the time did you approximately spend in:

Reading the AOM4STS methodology description: \_\_\_\_\_%

Reading and understanding the case study: \_\_\_\_\_%

Modelling the case study: \_\_\_\_\_%

**1 – Strongly agree 2 – Agree 3 – Not certain 4 – Disagree 5 – Strongly disagree**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | The description of the case study was clear to me |

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| 2. | I had no difficulties in modelling the goal model |

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| 3. | I had no difficulties in modelling the domain model |

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| 4. | I had enough time for accomplishing the modelling task |

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 |
| 6. | The concept of AOM4STS methodology were detailed enough to model the  |
|  | requirements of the system. |

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| 7. | The effort of modelling seems too high for an efficient use of the methodology in  |
|  | practice. |

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**Questions for the AOM4STS modelling software**

**1 – Strongly agree 2 – Agree 3 – Not certain 4 – Disagree 5 – Strongly disagree**

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| 1. | Which browser have you used to access the online modelling software? |
|  |  Mozilla Firefox |  Internet Explorer |
|  |  Google Chrome |  Safari |
|  |  Opera | Other, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | My thoughts about online access to the modelling software: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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| 2. | The propagation of roles created in the goal model into the domain model is helpful for the  |
|  | modeller. |

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|  | My thoughts about propagation of roles: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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| 3. | The propagation of changes made to the roles in the goal model into the domain model helps  |
|  | to reduce the modelling effort. |

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|  | My thoughts about propagation of changes made to roles: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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| 4. | The modelling software supports creation of syntactically correct models by preventing and  |
|  | reporting syntactically wrong connections. |

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|  | My opinion about creation of syntactically correct models: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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| 5. | The use of coloured connections in the creation of the models by the modelling software helps  |
|  | to improve the readability of the resulting models. |

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|  | My opinion about the use of coloured connections: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |