#### 1 TASKS FOR CONTEXT STUDY

| IAS            | KS FOR CONTEXT STUDY  |                                      |                                     |                |
|----------------|---|--------------------------------------|-------------------------------------|----------------|
| Task1<br>Tran1 | : Open the State Machine for the C  | Gate B. Find the                     | transition that is                  | labelled as    |
| 1)             | <ul> <li>Please first Read the following describe</li> <li>Event: No triggering event is referred. If the gate id is B.</li> <li>Action: The gate should initiall should be set to down.</li> </ul>                               | equired for this                     | transition.                         | s position     |
| 2)             | ☐ I have read the task's description Please answer before starting the task   | •                                    |                                     |                |
| How tool?      | difficult do you expect the task to be using the  | Very Easy                            | 1 2 3 4 5 6 7                       | Very Difficult |
| 3)             | Perform the task and develop the G sion.  | Guard and Action                     | n parts of the tran                 | sition expres- |
| 4)             | $\Box$ I am done with developing the tr<br>Please answer once you have finished   |                                      |                                     |                |
|                | difficult the task was based on your actual ience of using the tool?  | Very Easy                            | 1 2 3 4 5 6 7                       | Very Difficult |
| Task2<br>Tran2 | : Open the State Machine for the C  | Gate B. Find the                     | transition that is                  | labelled as    |
| 1)             | <ul> <li>Please first Read the following description</li> <li>Event: No triggering event is referred to Guard: If the time is NOT during gate's sensor senses blockage.</li> <li>Action: The gate should become to up.</li> </ul> | equired for this<br>ing the undergro | transition.<br>ound lots restricted |                |
| 2)             | ☐ I have read the task's description<br>Please answer before starting the tast  | 2                                    |                                     |                |
| How            | difficult do you expect the task to be using the  |                                      | 1 2 3 4 5 6 7                       |                |
| tool?          |   | Very Easy                            |                                     | Very Difficult |
| 3)             | Perform the task and develop the G sion.  | Guard and Action                     | n parts of the tran                 | sition expres- |
| 4)             | $\Box$ I am done with developing the tr<br>Please answer once you have finishe  |                                      |                                     |                |
| 1              | difficult the task was based on your actual ience of using the tool?  | Very Easy                            | 1 2 3 4 5 6 7                       | Very Difficult |

| Task3: Open | the State | Machine | for | the | Gate | D. | Find | the | transition | that is | labelled | as |
|-------------|-----------|---------|-----|-----|------|----|------|-----|------------|---------|----------|----|
| Tran3.      |           |         |     |     |      |    |      |     |            |         |          |    |

- 1) Please first Read the following description of the transition.
  - Event: After five seconds (recall that the time object notifies the system every five seconds).
  - Guard: The gates sensor does NOT sense blockage.
  - Action: The gate should become closed; that is, the gates position should be set to down.
  - $\square$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

# Task4: Open the State Machine for the Gate D. Find the transition that is labelled as Tran4.

- 1) Please first Read the following description of the transition.
  - Event: No triggering event is required for this transition.
  - Guard: The payment received at the gates Coin Slot is equal to the gates Exit
  - Action: The gate should become open; that is, the gates position should be set to up.
  - $\square$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\hfill\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

| Task5: | Open | the | State | Machine | for | the | Gate | D. | Find | the | transition | that is | labelled | as |
|--------|------|-----|-------|---------|-----|-----|------|----|------|-----|------------|---------|----------|----|
| Tran5. |      |     |       |         |     |     |      |    |      |     |            |         |          |    |

- 1) Please first Read the following description of the transition.
  - Event: No triggering event is required for this transition.
  - Guard: if the gate is blocked.
  - Action: No action is required for this transition.
  - $\square$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
- $\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

## Task6: Open the State Machine for the Gate C. Find the transition that is labelled as Tran6.

- 1) Please first Read the following description of the transition.
  - Event: Similar as T6Copy in GateA...
  - Guard: Similar as T6Copy in GateA.
  - Action: Similar as T6Copy in GateA.
  - $\hfill\Box$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\hfill\Box$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

| Task7: Open | the State | Machine | for | the | Gate | <b>B.</b> | Find | the | transition | that is | labelled | as |
|-------------|-----------|---------|-----|-----|------|-----------|------|-----|------------|---------|----------|----|
| Tran7.      |           |         |     |     |      |           |      |     |            |         |          |    |

- 1) Please first Read the following description of the transition.
  - Event: No triggering event is required for this transition.
  - Guard: No guard is required for this transition.
  - Action: Create a new class named GateCounter with a new function named as increaseCounter and then use it. Also, create an association between the GateCounter class and GateB class.
  - ☐ I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

# Task8: Find the transition that is labelled as Tran7 in Gate B and the transition that is labelled as Tran8 in Gate D.

- 1) Please first Read the following description of the transition.
  - Event: Use a function named as Transponder. You may need to create this function in the Sensor class before setting it in the Event.
  - Guard: No guard is required for this transition.
  - Action: No action is required for this transition.
  - $\square$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\hfill\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | 7                |
|---|-----------|---|---|---|---|---|---|---|---|------------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   |   | □ Very Difficult |

Task9: In this task, you need to extend the Class diagram to cover a new gate, namely Gate E, which controls the second entry into the Bauer complex for persons with disabilities and who have access to dedicated accessible-parking spots. You also need to develop a new State-Machine diagram for the gate E. Please edit the Class diagram and the State-Machine diagram based on the description given below.

- 1) Please first Read the following description of the transition. A disability-car that has an occupant with disabilities must have a valid permit card with an id and expiry date on it). When approaching the Gate E, the card scanner machine asks him/her to tap the permit card. The card scanner machine checks the card's validity (i.e., the card's id is registered in the parking lot's database, and the expiry date of the card is greater than or equal to the current date) and opens the gate if the card is valid. After 5 seconds, the system attempts to close the gate only if the gate is not blocked.
  - ☐ I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

- 3) Perform the task and develop the Guard and Action parts of the transition expression.
  - $\square$  I am done with developing the transition.
- 4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

### 2 Post-Session Experience Ratings for Context Study

|      | te answer to the following questions based on your actual experience using the in the study.  Compared to your initial expectation, To what extent did the tool was close to satisfy your expectation?          |
|------|---|
|      | Below My Expectation $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Above My Expectation  |
| 2)   | The Contextual User Interfaces capabilities meet my requirements.   |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
| 3)   | The Contextual User Interface is easy to use.   |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
| 4)   | <ul><li>During performing the tasks, to what extent did you experience the following challenges?</li><li>Relying on memory (Remembering the contextual information relevant to performing the tasks).</li></ul> |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
|      | <ul> <li>Switching between artifacts (Searching for information) and changing the<br/>focus.</li> </ul>   |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
|      | Maintaining the overview of the diagrams.   |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
|      | Too much scrolling and zooming.   |
|      | difficult the task was based on your actual rience of using the tool?   |
| ехре | Knowing the relations between artifacts.  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
|      | Arranging windows or Finding the right window.  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree   |
| Than | k you for your time and participation in the study.   |

## 3 PRE-SESSION EXPECTATION RATINGS FOR DEBUGGING STUDY

| Please answer to the following questions based on your overall expectations of using modelling tools.   |
|---|
| To what extent do you agree that inconsistencies should be prevented immediately rather than allowing them to exist and fix them at a later time? |
| Very Easy □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 Very Difficult  |
| 2) To what extent do you agree that maintaining inconsistencies at all time is counterproductive and intrusive (disrupting the focus tasks)?      |
| Very Easy □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 Very Difficult  |

### 4 TASKS FOR DEBUGGING STUDY

| GateIDs. If them and fix   | the GateID enumeration class<br>you believe that this change<br>them accordingly.<br>ve read the task's description  | will introduce   |                                     |                                  |   |  |  |  |  |  |  |  |
|--|--|--|-------------------------------------|----------------------------------|---|--|--|--|--|--|--|--|
|  | answer before starting the ta  |  |                                     |                                  |   |  |  |  |  |  |  |  |
| How difficult d  | o you expect the task to be using the  | Very Easy  | 1 2 3                               | 4 5 6 7                          | Very Difficult                            |  |  |  |  |  |  |  |
| 3) Perfor<br>☐ I an<br>4) Please   |  |  |                                     |                                  |   |  |  |  |  |  |  |  |
| How difficult the experience of the                                      | Very Difficult   |  |                                     |                                  |   |  |  |  |  |  |  |  |
| that th⊓<br>□Yes   | g the task, did you get any we model is erroneous or probune No please answer the following  | lematic?   | message                             | from th                          | ne tool indicating                        |  |  |  |  |  |  |  |
| Area   |  |  |                                     | 1 2 3                            | 4 5 6 7                                   |  |  |  |  |  |  |  |
| Effectiveness  | Where you able to fix it?  |  | Strongly<br>Disagree                |                                  | □ □ □ Strongly Agree                      |  |  |  |  |  |  |  |
| Helpfulness  | Overall, the error message(s) and war solve the problem.   | nings helped me to                                     | Strongly<br>Disagree                |                                  | □ □ □ Strongly Agree                      |  |  |  |  |  |  |  |
| Recovery   | Overall, the tool provided me with err<br>techniques (or steps) that made it eas<br>problem.   |  | Strongly<br>Disagree                |                                  | □ □ □ Strongly<br>Agree                   |  |  |  |  |  |  |  |
| have an attr<br>GateD is rec<br>also fix the i<br>1)   I ha<br>2) Please | class Gate is a superclass of ibute named as id. You, as a dundant and should be remoinconsistencies that this task we read the task's description answer before starting the ta | modeller find oved from the l may introduce carefully. | that the<br>ExitGateI<br>e to the r | id attri<br>D class.<br>nodel, i | bute in Exit-<br>Remove it and<br>if any. |  |  |  |  |  |  |  |
| tool?  | o you expect the task to be using the  | Very Easy  | 1 2 3                               | 4 5 6 7                          | _   |  |  |  |  |  |  |  |
| 3) Perford □ I and 4) Please   | $\square$ I am done with developing the transition.  |  |                                     |                                  |   |  |  |  |  |  |  |  |
| experience of u  | -  | Very Easy  |                                     |                                  | Very Difficult                            |  |  |  |  |  |  |  |
| •  |  |  |                                     |                                  | -   |  |  |  |  |  |  |  |

| ,               | g the task, did you get any wa<br>e model is erroneous or probl   | 0                  | message              | fr  | on  | ı t | he | tc | Ol | ın    | dicating          |  |  |
|-----------------|---|--------------------|----------------------|-----|-----|-----|----|----|----|-------|-------------------|--|--|
| If Yes,         | please answer the following of  | questions:         |                      |     |     |     |    |    |    |       |                   |  |  |
| Area            |   |                    |                      | 1   | 2   | 3   | 4  | 5  | 6  | 7     |                   |  |  |
| Effectiveness   | Where you able to fix it?   |                    | Strongly             | П   |     | П   | П  | П  | П  | П     | Strongly          |  |  |
|                 |   | Disagree           | -                    |     | _   | _   |    | -  |    | Agree |                   |  |  |
| Helpfulness     | Overall, the error message(s) and warr  | nings helped me to | Strongly             |     |     |     |    |    |    |       | Strongly          |  |  |
| ricipianiess    | solve the problem.  | iiigs neiped me to | Disagree             | -   |     | _   | _  | ٦  | -  |       | Agree             |  |  |
| Recovery        | Overall, the tool provided me with erro   | or recovery        | Strongly             | П   |     |     |    | П  |    |       | Strongly          |  |  |
| Recovery        | techniques (or steps) that made it easi<br>problem.   |                    | Disagree             |     | ٦   | J   | ٦  |    |    |       | Agree             |  |  |
| 2) Please       | ve read the task's description answer before starting the tase by you expect the task to be using the                             | •                  | 1 2 3                | 4 ! | 5 ( | 5 : | 7  |    |    |       |                   |  |  |
| tool?           | ,   | Very Easy          |                      |     | 7 1 |     | 1  |    | Ve | rv Γ  | ifficult          |  |  |
| 4) Please       | n done with developing the tr<br>answer once you have finished<br>the task was based on your actual                               |                    | 1 2 3                | 4   | 5 ( | 5 : | 7  |    |    |       |                   |  |  |
| experience of u | -   | Very Easy          |                      |     | 1   | _   | +  |    | Ve | rv Γ  | ifficult          |  |  |
| that th<br>□Yes | 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic? |                    |                      |     |     |     |    |    |    |       |                   |  |  |
| Area            |   |                    |                      | 1   | 2   | 3   | 4  | 5  | 6  | 7     |                   |  |  |
| Effectiveness   | Where you able to fix it?   |                    | Strongly<br>Disagree |     |     |     |    | _  | Ī  |       | Strongly<br>Agree |  |  |
| Helpfulness     | Overall, the error message(s) and warr solve the problem.   | nings helped me to | Strongly<br>Disagree |     |     |     |    |    |    |       | Strongly<br>Agree |  |  |
| Recovery        | Overall, the tool provided me with errotechniques (or steps) that made it easi  |                    | Strongly<br>Disagree |     |     |     |    |    |    |       | Strongly<br>Agree |  |  |
|                 | problem.  |                    |                      |     |     |     |    |    |    |       |                   |  |  |

Task4: The Parking class has an operation named as enteringParkingLot. You, as a modeller find that the enteringParkingLot is a redundant operation and should be

| removed   | from   | the : | <b>Parking</b> | class. | Remove     | it an | d also | fix | all | the | transitions | that | are |
|-----------|--------|-------|----------------|--------|------------|-------|--------|-----|-----|-----|-------------|------|-----|
| referring | to the | ent   | eringPa        | rkingI | Lot as exp | plain | ed bel | ow: |     |     |             |      |     |

- Event: If enteringParkingLot is used in the event, change the event to goingThroughTheGate.
- Guard: If enteringParkingLot is used in the guard, delete the guard. Consequently, if the containing transition will have no event, guard, or action after deleting the guard, then delete the whole transition.
- Action: If enteringParkingLot is used in the action/effect, delete the action. Consequently, if the containing transition will have no event, guard, or action after deleting the action, then delete the whole transition.
- 1)  $\square$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | · [ |                |
|--|-----------|---|---|---|---|---|---|---|-----|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   |     | Very Difficult |

3) Perform the task.

☐ I am done with developing the transition.

4) Please answer once you have finished the task:

| How difficult the task was based on your actual |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|---|-----------|---|---|---|---|---|---|---|----------------|
| experience of using the tool?                   | Very Easy |   |   |   |   |   |   |   | Very Difficult |

5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?

□Yes □No

If Yes, please answer the following questions:

| <u> </u>      |   |          |   |   |   |   | _ | _ |   |          |
|---------------|---|----------|---|---|---|---|---|---|---|----------|
| Area          |   |          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |          |
| Effectiveness | Where you able to fix it?                               | Strongly |   |   |   |   |   |   |   | Strongly |
|               |   | Disagree |   |   |   |   |   |   |   | Agree    |
| Helpfulness   | Overall, the error message(s) and warnings helped me to | Strongly |   |   |   |   |   |   |   | Strongly |
|               | solve the problem.                                      | Disagree |   |   |   |   |   |   |   | Agree    |
| Recovery      | Overall, the tool provided me with error recovery       | Strongly |   |   |   |   |   |   |   | Strongly |
|               | techniques (or steps) that made it easier to fix the    | Disagree |   |   |   |   |   |   |   | Agree    |
|               | problem.  |          |   |   |   |   |   |   |   |          |

Task5: The Sensor class has the Blockage attribute with the type of int. Change the Blockage attributes type from int to bool and find any inconsistencies it may occur.

- 1)  $\Box$  I have read the task's description carefully.
- 2) Please answer before starting the task:

| How difficult do you expect the task to be using the |           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |                |
|--|-----------|---|---|---|---|---|---|---|----------------|
| tool?  | Very Easy |   |   |   |   |   |   |   | Very Difficult |

3) Perform the task.

| <ul><li>☐ I am done with developing the transition.</li><li>4) Please answer once you have finished the task:</li></ul>   |  |                    |                      |    |     |     |     |     |      |                   |
|---|--|--------------------|----------------------|----|-----|-----|-----|-----|------|-------------------|
| How difficult the experience of u   | e task was based on your actual  | Very Easy          | 1 2 3 4              | 4  | 5 ( | 5 7 | 1   | ٧/  | erv  | Difficult         |
| 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?  □Yes □No  If Yes, please answer the following questions: |  |                    |                      |    |     |     |     |     |      |                   |
| Area  |  |                    |                      | 1  | 2   | 3   | 4   | 5   | 6 7  |                   |
| Effectiveness   | Where you able to fix it?  |                    | Strongly<br>Disagree |    |     |     |     |     |      | Strongly<br>Agree |
| Helpfulness   | Overall, the error message(s) and war solve the problem.                                 | nings helped me to | Strongly<br>Disagree |    |     |     |     |     |      | <del></del>       |
| Recovery  | Overall, the tool provided me with err techniques (or steps) that made it eas problem.   | •                  | Strongly<br>Disagree |    |     |     |     |     |      |                   |
| occur.<br>1) 🗆 I ha   | gate attributes type from bove read the task's description answer before starting the ta | carefully.         | nd any ii            | nc | on  | SÌS | ten | ici | es : | it may            |
| How difficult do  | you expect the task to be using the  | Very Easy          | 1 2 3 4              | 4  | 5 ( | 5 7 | 1   | V   | erv  | Difficult         |
| 3) Perform the task.  □ I am done with developing the transition.  4) Please answer once you have finished the task:  |  |                    |                      |    |     |     |     |     |      |                   |
| How difficult the experience of u   | e task was based on your actual sing the tool?   | Very Easy          | 1 2 3 4              | 4  | 5 ( | 5 7 |     | V   | ery  | Difficult         |
| 5) During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?  □Yes □No   |  |                    |                      |    |     |     |     |     |      |                   |
| If Yes,   | please answer the following  | questions:         |                      |    |     |     |     |     |      |                   |

| F.I.   |  |                    |          |     |       | ,   |         |  |
|--|--|--------------------|----------|-----|-------|-----|---------|--|
| Area   |  |                    |          | 1 2 | 3     | 4 5 | 6 7     |  |
| Effectiveness  | Where you able to fix it?  |                    | Strongly |     |       |     |         | Strongly   |
|  |  |                    | Disagree |     |       |     |         | Agree  |
| Helpfulness  | Overall, the error message(s) and warr   | nings helped me to | Strongly |     |       |     |         | Strongly   |
|  | solve the problem.   |                    | Disagree |     |       |     |         | Agree  |
| Recovery   | Overall, the tool provided me with err   | or recovery        | Strongly |     |       |     |         | Strongly   |
|  | techniques (or steps) that made it easi  | ier to fix the     | Disagree |     |       |     |         | Agree  |
|  | problem.   |                    |          |     |       |     |         |  |
| Task7: The Lot class is a superclass of undergroundLot class. The Lot class has an operation named as checkIfRestStartTime and undergroundLot class has an operation named as isRestStartTime. You, as a modeler find that the two operations in the two classes are equivalent and only one of them should be used. Thus, you decide to remove isRestStartTime in the subclass undergroundLot. Remove it and also fix the inconsistencies, if any, that this task may introduce to the model.  1)   I have read the task's description carefully.  2) Please answer before starting the task: |  |                    |          |     |       |     |         | eration<br>ne two<br>e to                        |
| Li l'ffle-l  |  |                    |          | 4 - | c   - | , [ |         |  |
| tool?  | o you expect the task to be using the  | \/                 | 1 2 3 4  | 4 5 | 6 7   |     | 1/      | D:tt: I+   |
| toor   |  | Very Easy          |          |     |       | 1   | very    | Difficult  |
| ☐ I am 4) Please   | m the task.  In done with developing the transwer once you have finished the task was based on your actual | ed the task:       | 1 2 3    | 4 5 | 6 7   |     | Varia   | Difficult  |
| experience of u  | ising the toors  | Very Easy          |          |     |       | 1   | very    | Difficult  |
| <ul> <li>During the task, did you get any warning or error message from the tool indicating that the model is erroneous or problematic?</li> <li>□Yes □No</li> <li>If Yes, please answer the following questions:</li> </ul>   |  |                    |          |     |       |     |         |  |
| Area   |  |                    |          | 1 2 | 3     | 4 5 | 6 7     |  |
| Effectiveness  | Where you able to fix it?  |                    | Strongly |     |       |     |         |  |
| 225.17.2.11.2.33   | The foundation of the feet   |                    | Disagree |     |       | 7   |         | Agree  |
| Helpfulness  | Overall, the error message(s) and war  | nings helped me to | Strongly |     |       |     |         | <del>i                                    </del> |
| i icipiumess   | solve the problem.   | migs neiped me to  | Disagree |     |       | 7   | "  "    | Agree  |
| Recovery   | Overall, the tool provided me with error   | or recovery        | Strongly |     |       |     |         | <del></del> _                                    |
| 11.0007017   | techniques (or steps) that made it easi  |                    | Disagree |     |       | 715 | 11 11 1 | Δgree  |

Task8: Delete the isGateBlocked operation from the Sensor class. Find the referent elements of this element. If the referent is a Guard element, then change it to check if the blockage attribute is true. If the referent element is an Event or an Action, then delete the the Event or the Action.

problem.

| <ol> <li>I have read the task's description carefully.</li> <li>Please answer before starting the task:</li> </ol>                                       |  |            |  |     |     |   |   |           |           |
|--|--|------------|--|-----|-----|---|---|-----------|-----------|
| How difficult do you expect the task to be using the tool?  1 2 3 4 5 6 7  Very Easy □ □ □ □ □ □ □ □ Very Difficult                                      |  |            |  |     |     |   |   | Difficult |           |
| <ul> <li>3) Perform the task.</li> <li>□ I am done with developing the transition.</li> <li>4) Please answer once you have finished the task:</li> </ul> |  |            |  |     |     |   |   |           |           |
| How difficult the  | ne task was based on your actual                             | Very Easy  | 1 2 3 4                                      | 1 5 | 6   | 7 |   | /         | Difficult |
|  | e model is erroneous or brob                                 | lematic?   |  |     |     |   |   |           |           |
| □Yes   | e model is erroneous or prob □No please answer the following |            |  |     |     |   |   |           |           |
| □Yes If Yes,   | □No  |            |  | 11: | ) 3 | 4 | 5 | ,<br>6  7 |           |
| □Yes   | □No  |            | Strongly<br>Disagree                         | 1 2 | 2 3 | 4 | 5 | 6 7       | Strongly  |
| □Yes<br>If Yes,  | □No please answer the following                              | questions: | Strongly<br>Disagree<br>Strongly<br>Disagree |     | 2 3 |   |   | 6 7       |           |

## 5 Post-Session Experience Ratings for Debugging Study

|      | te answer to the following questions based on your actual experience using the in the study.  Compared to your initial expectation, To what extent did the tool was close to satisfy your expectation? |  |  |  |  |  |  |  |
|------|--|--|--|--|--|--|--|--|
|      | Below My Expectation $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Above My Expectation   |  |  |  |  |  |  |  |
| 2)   | The Interactive Consistency Management Interfaces capabilities meet my requirements.   |  |  |  |  |  |  |  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree  |  |  |  |  |  |  |  |
| 3)   | The Interactive Consistency Management Interface is easy to use.   |  |  |  |  |  |  |  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree  |  |  |  |  |  |  |  |
| 4)   | How confident you are with your level of success in fulfilling the tasks (do you think you might have left some uncaught errors in the model)?   |  |  |  |  |  |  |  |
|      | Strongly Unconfident $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Confident   |  |  |  |  |  |  |  |
| 5)   | Based on your experience, to what extent do you feel being disrupted by the tool?  |  |  |  |  |  |  |  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree  |  |  |  |  |  |  |  |
| 6)   | Based on your experience, to what extent do you agree that being disrupted was worth of delivering more correct models and being more confident in the solution?                                       |  |  |  |  |  |  |  |
|      | Strongly Disagree $\Box$ 1 $\Box$ 2 $\Box$ 3 $\Box$ 4 $\Box$ 5 $\Box$ 6 $\Box$ 7 Strongly Agree  |  |  |  |  |  |  |  |
| Than | k you for your time and participation in the study.  |  |  |  |  |  |  |  |