

In this assignment, students will get acquainted with the concept of situation awareness (SA). For this assignment students have to work in pairs. Students will experience a low-base simulator environment in which they act as a maritime operator. During the exercises students will experience different methods to measure SA. To finish this assignment, students will have to think of other settings to study SA.

The background material for this assignment: Chapter by E. Wiersma on SA concept and Assessment (in specific **paragraph 2.5 and 2.6**).

Report your findings before Monday May 17th – 09.00h by email to s.sillem@tudelft.nl. Below is discussed what questions you should focus on. One report is handed in per two students.

Part 1: observing the operator

Read the instructions carefully. When one student performs the exercise, the other student takes notes for the report. Both students perform each exercise (change order).

During the exercises you will see four different assessment approaches that can be used to study situation awareness in maritime traffic control. The assessment approaches are:

1. test your own situation awareness in a scenario with or without course and speed vector
2. indication of the location of all ships (after the screen goes blank)
3. indicate with a colour the ships having a conflict, indicating the location of each conflict
4. prevent conflicts by speeding up or slowing down ships

1a. Describe your observations in performing each of the tests. What happens? How good are (the both of) you? What contributes to successes or failures? Describe this for both situations, as an observer and as an operator.

1b. Do the observation notes of the observing student correspond with the experience of the performing student? What are the differences in observation? Be clear in the report what is based on observation notes and what is based on experiencing the role of VTS operator.

Part 2: options for SA measuring

Figure 2.6 in the chapter on SA summarises assessment approaches to measure Situation Awareness. Discuss for each of the 4 scenario's that you have practised in the simulator which parts of the "measuring SA" diagram from the figure (objective, subjective, process system, operator, task performance, physiological) is filled in by that specific scenario / exercise. Not all of the blocks in Figure 2.6 have been investigated by the 4 scenario's. For the remaining blocks, describe how these could be studied. Propose a test for those boxes that were not covered. Give a description on: what you propose to test, how the test would be performed and what it should learn you.

Part 3: external validity

Describe the external validity for each of the exercises you have done on the 3 levels of Situation Awareness. Think for example about what simulator research can tell you about Situation Awareness in the real world.

Grading

$$\text{Grade} = ([\text{part 1}] + [\text{part 2}] + [\text{part 3}]) / 10$$

Part 1: 50 points (1a 35 and 1b 15 points). Emphasis is on whether the students understand the topic and whether all questions in the assignment are answered. Note the difference between the experiences of the observing student and the performing student (question 1b).

Be aware that for both 1a and 1b each of the *four assessment* approaches from the exercise have to be discussed.

Part 2: 30 points. Emphasis on whether the right blocks from the model are mentioned and on whether the examples are explained correctly and what can be concluded from them.

Part 3: 20 points. Emphasis on understanding of representativeness of simulator research.