

Case Study: 1

Scenario

A computerized system is being created to monitor the life support system on board a submarine. It monitors air quality, water supplies and temperature.

This system will be supplied and maintained by SubsInc. SubsInc uses the V-model for software development and conducts four levels of testing, from unit through to operational and site acceptance testing. Two key risks identified for the air quality system are:

If the percentage of oxygen in the air falls too low, personnel may suffocate

If the concentration of carbon dioxide in the air rises too high, the air may become toxic. To address these risks, the requirement specification for this system includes the following requirements:

R1) Oxygen must be replaced as it is consumed. R2) Carbon dioxide must be removed from the air.

These requirements must be reflected in the functional, technical and program specification documents.

You are a newly recruited test manager.

A risk register has been produced with the following additional risks identified.

Question: 1

Which one is a product risk associated with the air quality management system?

- A. The system required to monitor oxygen levels may be more expensive than those required to monitor air temperatures.
- B. SubsInc may need to recruit extra developers and testers to deliver the project on time.
- C. Oxygen levels may reach dangerously low levels.
- D. Extreme temperatures may lead to heat exhaustion of personnel.

Answer: C

Question: 2

Which of the following would be an entry criterion into site acceptance testing for the air quality monitoring system?

- A. That the code written to fulfil the requirement to monitor carbon dioxide levels has been 100% path tested.
- B. That the functional specification accurately reflects requirements R1 and R2.
- C. That the system has been tested at levels of oxygen usage well beyond anticipated personnel levels.
- D. That the requirements for temperature control have been signed-off.

Answer: C

Question: 3

Which of the following is an accurate depiction of the hierarchy of test management documentation (where the highest comes first)?

- A. Test policy-Test strategy-Project test plan-System test plan

- B. Test strategy-Test policy-Project test plan-System test plan
- C. Test policy-Project test plan-Test strategy-System test plan
- D. Project test plan-Test strategy-System test plan-Test policy

Answer: A

Question: 4

Which of the following test design techniques would be most suitable for testing that the oxygen is released at the required times?

- A. Decision Testing.
- B. Statement Testing.
- C. Data flow Testing.
- D. Boundary Value Analysis.

Answer: D