

Level 1

System asks learner to navigate to a specific target within the airways anatomy. The system shows labels for parts of airway anatomy. Learner scores points by correctly reaching the specified targets. The system should also track the time it takes for the learner to reach the specified target.

Level 2

System asks learner to navigate to a specific target within the airways anatomy. The system DOES NOT show labels for parts of airway anatomy. At this point in the simulation the learner should know the airway anatomy well enough to reach the specified targets without labels. The learner scores points by correctly reaching the specified targets. The system should also track the time it takes for the learner to reach the specified target.

Level 3

The system randomly places tumors in the airways. Possible tumors are:

- Carcinoid tumor
- Squamous cell carcinoma
- Carinal tumors
- Hamartoma
- *For later iterations, also include extrinsic compression (tumor outside airways)*

The system should randomize tumor placement and tumor size. When learner finds a tumor, the learner has to correctly identify the tumor and its location. The system will need a UI for learners to report findings.

Level 4

The system randomly places sources of bleeding in the airways. The blood should always flow from the source of the bleed to the trachea opening. Learners have to locate the source of the bleed and report location within airway anatomy

Notes

From meeting with Phil Lamberti, 9/25/2017

- Staying off airway walls is important - when scope touches airway walls, patient coughs. We can implement this by counting the number of times the learner bumped into the wall and for a random number between every 3rd to 5th collision shake the camera. Introducing audio of coughing would help the effect. When cough occurs, the learner view shifts back - the scope is usually pushed back a little bit.
- Change the scale of the first person controller. Right now the view from the scope is too wide - the FPC looks like a tiny person inside a cave. The actual view is much tighter - there is less space between the scope's camera and airway walls.