

1. The pilot flies a given mission scenario using a given aircraft system in a man-in-the-loop simulation.

2. At some random point in time the simulation is halted and the cockpit and out-the-window displays are blanked.

3. The pilot is asked a series of questions in order to determine his knowledge of the situation at that exact moment in time. These questions correspond to the pilot's SA requirements. The SAGAT queries are programmed on a Macintosh computer, available at each pilot station, to allow for the rapid input and storage of highly spatial information.

4. As it is impossible to query the pilot about all of his SA requirements in a given stop, a portion of the SA questions are randomly selected and asked of the pilot each time. This random sampling method allows consistency and statistical validity, thus allowing SA scores to be easily compared across trials, pilots, systems and missions. Some of the questions in any particular query will pertain to highly important SA information and some of the questions will pertain to more secondary SA information.

5. At the completion of the trials, the query answers are evaluated on the basis of what was actually happening in the simulation. This is accomplished by comparing the pilot's answers to data collected from the simulation computers. (Where necessary this may be augmented by subjective evaluations from a team of expert pilots, e.g. for a determination of the priority threat.) The comparison of the real and perceived situation provides an objective measure of pilot SA.

6. A composite SAGAT score is then determined for the system under investigation. That SAGAT score is typically stratified into the three zones (immediate, intermediate, and long-range) described previously, to provide evaluators with a better picture of the pilot's SA. Additionally, individual components contributing to SA can be examined separately to provide more detailed diagnostics to the designer.

7. This random sampling process is repeated a number of times for each of several pilots flying the same system, in order to obtain the n required for statistical significance. SAGAT scores for any system design are then compared to SAGAT scores for other systems.