

**Human Systems Integration
BAA 07-013**

**Second Group of Questions and Answers
06 March 2007**

1. I am confused somewhat by GAP #2 of the BAA: "Displaying Information with Uncertainty". The part that confuses me is that clearly many of the S&T issues/gaps called out pertain to Navy aircraft displays, yet the 1st sentence of the "Challenge" paragraph specifically calls out the Undersea Warfare need with no mention of AIR/Surface need. Are the submarine needs in this Gap area your only interest area, i.e, does this preclude any Aviation proposals from being seriously considered for this Gap area?

Response: The "Displaying Information with Uncertainty" gap is not limited to undersea warfare applications. The deliverables from this gap should apply to other platforms such as aviation, surface, and ground.

2. The announcement states that a primary focus is undersea warfare. Do you have a specific operator or workstation in mind?

Response: No. Although two gaps (2 & 3) relate to undersea warfare, the BAA announcement is also interested in aviation and surface operators.

3. A predictive visual performance model is desired. Are we correct in assuming that this means a computational model?

Response: Yes

4. In general, what level of abstraction are you interested in? For example, should the predictive visual performance model be at the level of determining, for a given display, what operators attend to and what their subsequent actions/decisions are?

Response: The model should inform the acquisition customer what is an ideal display for a given application. The model would inform the customer of the optimal display spatial, temporal, luminance, and color setting for a given application. For example, the model would specify display physical dimensions, font and icon spatial dimensions, font and icon color and luminance values, background texture spatial, color, and luminance values, and temporal settings. These optimal values would be based on expected human performance in viewing this display given the suggested settings.

5. Is there an existing experimental test bed available for experimentation?

Response: No.

6. Are you primarily interested in visual displays (as opposed to multi-modal)?

Response: Don't have a preference.

7. What did you mean by "homogenous and heterogeneous environments" (from page 8)?

Response: A homogenous environment has a uniform background with similar luminance values while heterogeneous environment has a non uniform background containing diverse luminance values. A simple homogenous environment example is a white target on a black background while heterogeneous environment is a white target on a multi-colored background with numerous geometric shapes varying in space, time, and luminance.

8. Can you point us to or provide any literature documenting the gaps identified in the announcement? Studies performed, experiments conducted, etc.

Response: The basis of the gaps was determined by communications with OPNAV, operational users, SYSCOMs, and ONR science advisors. The basic purpose trying to identify human systems integration S&T requirements relevant to aviation, surface, and undersea warfare needs.