NCSU/Aptima – NASA NRA-07 Research

12/13/07

Team Members: Alexander, Kaber, Kaufmann, Kim, Stelzer

Agenda:

Review of action items from Year 1

- Completion of ASEM manuscript:
  - Kaber – Questions, Hypotheses, Experiment Design, Procedures, Limitations and future work (1/7/08)
  - Hsiang – Modeling perceptions of clutter (???)
  - Kaufmann – Sections of interest (???)
- HFES submission – Aviation TG? (1/28/08)
  - Who wants to take the lead on this?

New business

- Year 2 experiment planning:
  - Desired sample size and demographic (Alexander, Kaufmann)
  - HUD configurations to be studied in Year 2 (Kaber, Kim, Prinzel).
    - Low, medium and high clutter conditions.
  - Objective measures for characterizing visual properties of HUDs (Kaufmann, Kaber).
  - Pilot performance measures to be collected (Kaufmann, Stelzer):
    - Correlation with clutter ratings
    - Identification of clutter threshold (also need subjective measure for cross-validation)
  - Development of subjective rating scales and overall clutter score (Kaber, Stelzer, Alexander):
    - Which pairs of terms to use based on psychophysical modeling and factor analysis?
  - Defining test conditions and procedures…
    - Flight scenario – KRNO approach and landing – curved or

ILS (Kaufmann, Kaber)

Mode of flight control – hand fly or autopilot? (Kaufmann)

One or more displays per trial? (All)

Workload conditions – nominal and emergency. (Kaufmann)

Turbulence

Engine failure

Design – all factors within or some between? (All)

(How many trials per pilot?)

(Need to study CaD-CE briefing and experiment materials – This is the setup we will be using. (All))

Current Issues:

Recruiting of pilots (10-20) for experiment (Prinzel, Bailey)

Who can attend pilot testing at Langley from March 3-7?

Who can participate in full experiment at Langley after May 15?

(What dates in summer are preferable?)

Year 2 Outcomes:

(Need to stay focused on these goals.)

Objective model of perceived clutter

Subjective clutter preference threshold and objective performance clutter threshold

Subjective clutter rating scale

SPIE conference presentation (Prinzel suggested)

(Meeting is focused on visual display design and device performance. Some research on human performance with displays.)

Another journal article