



NASA MATB-II: The New and Improved Multi-Attribute Task Battery

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Objective

Create a testing platform that:

- allows us to investigate human performance in multi-tasking contexts that require use of automated tasks;
- is representative of piloting tasks, but does not require pilot domain knowledge.

The Original NASA MATB

- Developed in 1990 for PCs in Quick Basic.
- Documented in Comstock & Arnegard (1992) NASA-TM-104174
- Widely used:
 - Cited in over 136 papers.
 - Used for testing in over 50 studies
 - Used in over 10 countries outside U.S.

Broad Application

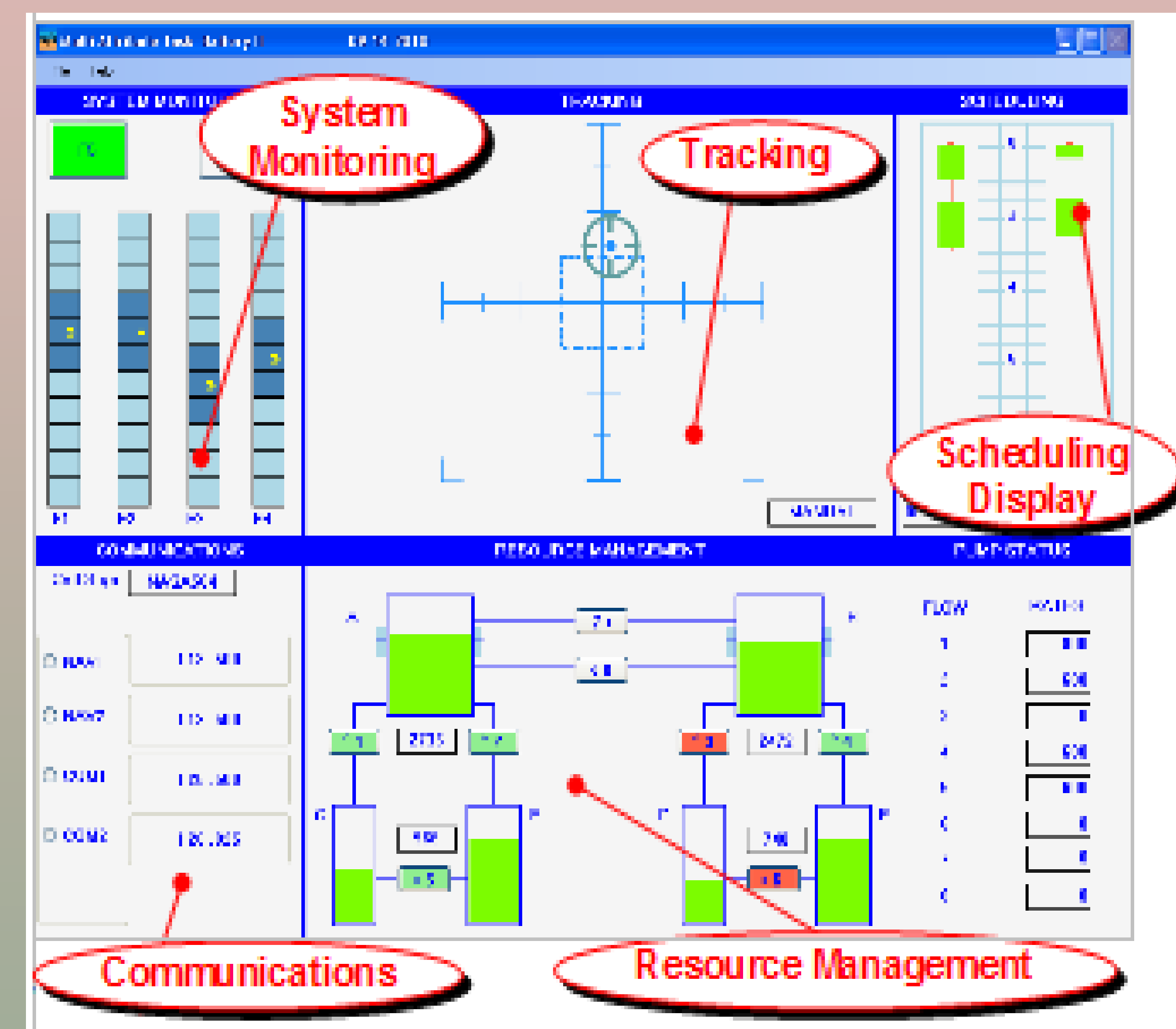
Aviation, Nuclear Power, Drug Efficacy & Effects, Fatigue, Automation Complacency, Adaptive Automation ...

First in-house customer, Chad Stephens & Alan Pope – Operator Engagement Index & Adaptive Automation (sponsored by Aviation Safety's Vehicle Systems Safety Technologies program).

Several other labs have requested new version.

Current NASA-MATB-II Tasks

- System monitoring
- Tracking (Manual/Automated)
- Schedule of tracking transitions
- Communications
- Resource management



Technical Challenge

Revised NASA Langley Multi-Attribute Task Battery

- Visual Studio Basic.net for Windows (XP, Vista, 7)
- Improved, GUI-supported task scripting capabilities
- Improved tracking target generation algorithm
- GUI has point & click and keyboard entry
- Training mode explains testing elements
- 80 pre-recorded audio messages for communications task
- Enriched data collection features
- Source-code distribution to encourage development
- Website to encourage user collaboration

The Future of NASA MATB

- Interfacing to external devices
- More sophisticated levels of task automation
- More precise and flexible data reporting
- Within-task performance feedback windows
- Experimenter toolkit for adding custom tasks
- Experimenter toolkit to change task size/position

**NASA MATB-II, v.1.0
Now Available!**

*For more information, please email:
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Sponsoring Program

System-Wide Safety & Assurance Technologies