Augmented Reality System Workspace Design

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Project Objective

- To create a foundation for Raytheon in workspace design and assembly to use going forward that can reduce labor and assembly costs through more efficient and increased labor production.

Expected Benefits

- Improve the ergonomics of the workspace design
- Reduce amount of worker errors with improved physical workspace
- Decrease assembly cycle time
- Reduce learning curve of the worker
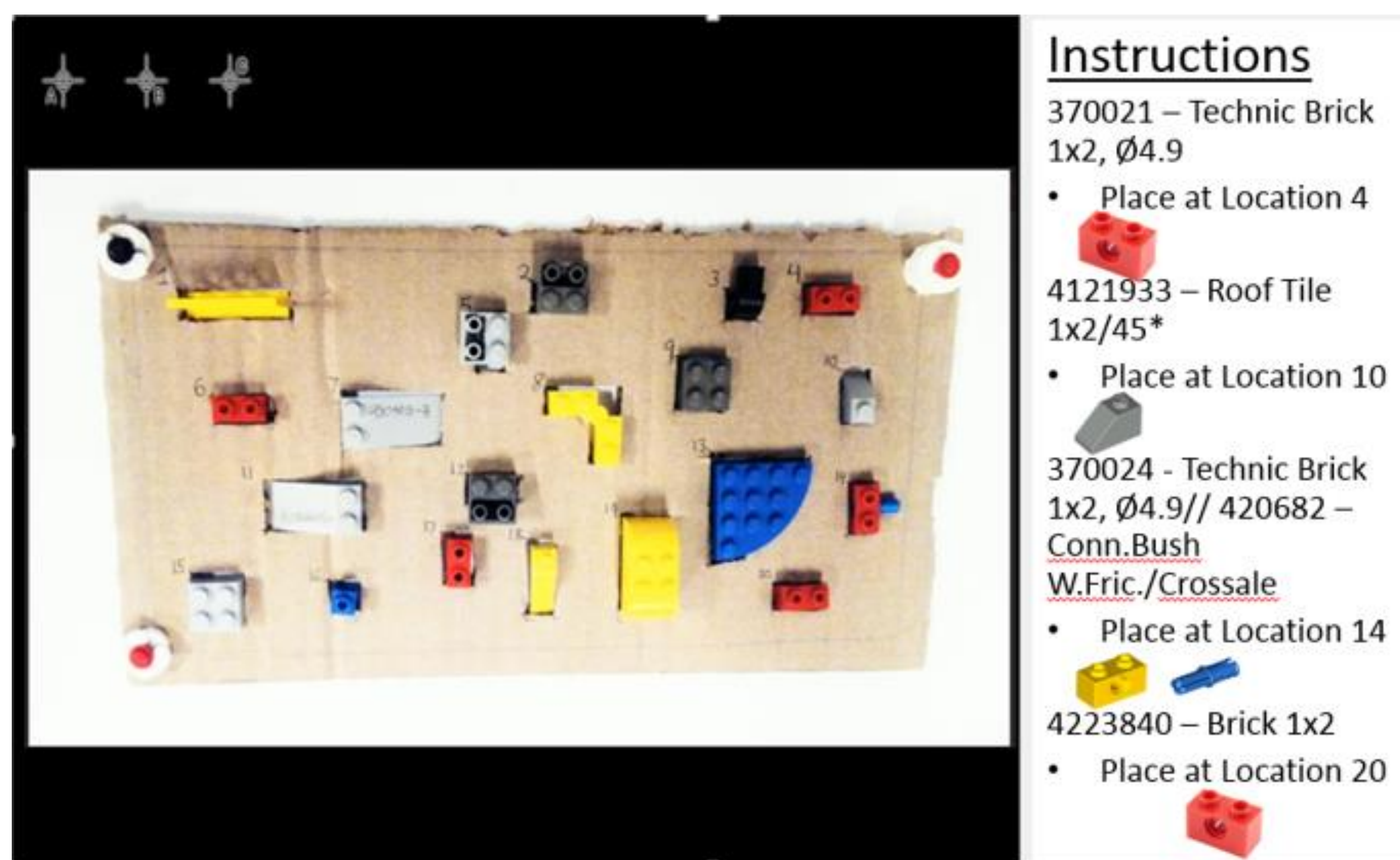
Current circuit board testing environment
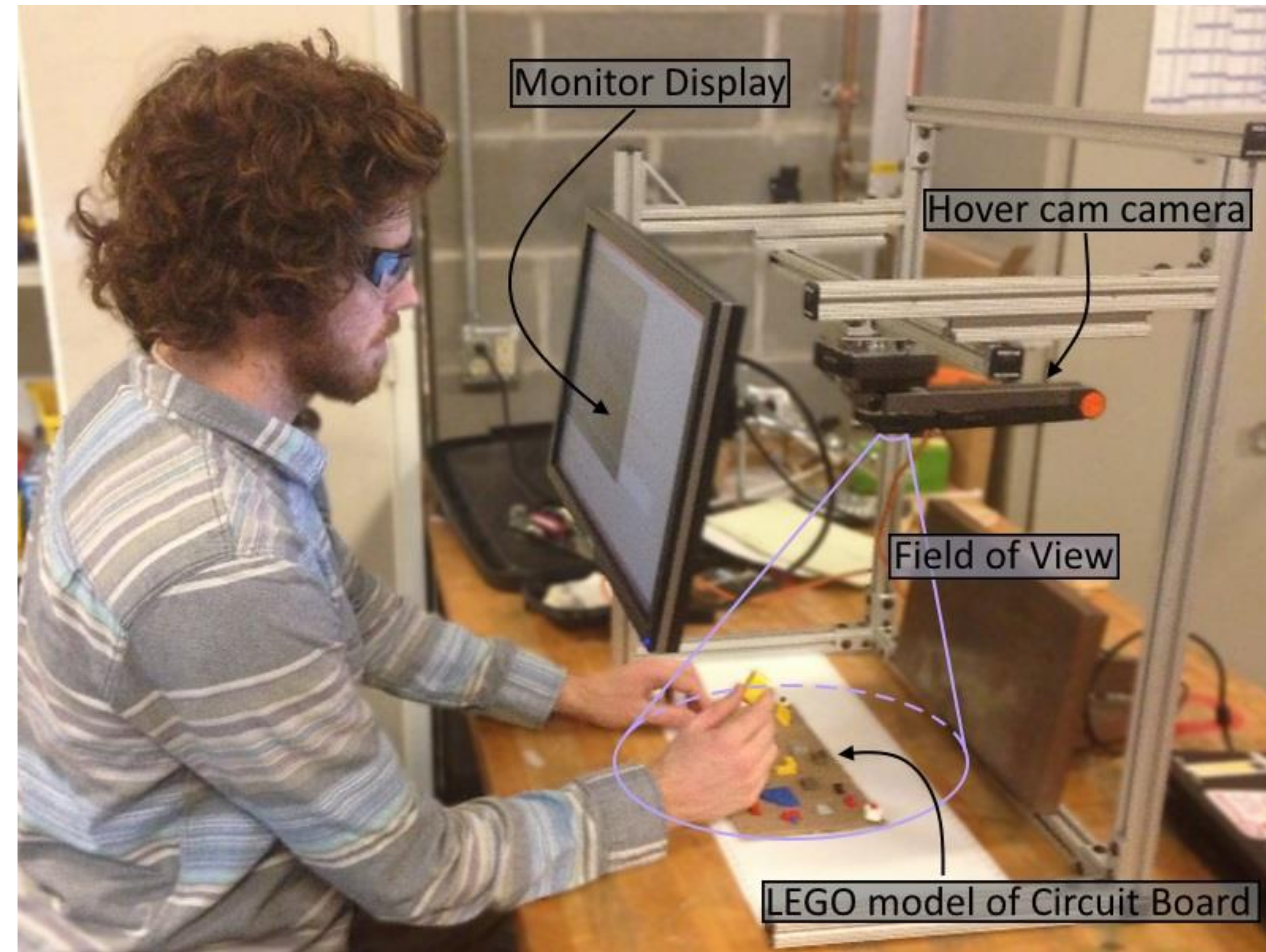
Demonstration of the current ergonomic workspace prototype

Technical Approach

- The software sub team focused on learning how to use the software with the purpose of suggesting improvements to the software development team
- The testing sub team focused on improving the ergonomics of the physical workspace through testing the system
- The physical layout team designed and changed the system based on testing and research of industry standards

Semester Accomplishments

- Built a new frame using an 80/20 Aluminum kit
- Improved the camera and monitor mounting system
- Simulated the system using a cardboard circuit board model
- Analyzed test results to offer suggested improvements to the workspace
- Installed and analyzed software, in order to suggest improvements to it in a educated manner
- Built a prototype model on the software with purpose of tracking the final testing prototype model

Suggested Improvements

- Make it faster and easier to upload files (CSV files, PDF files, JPEG images) into datamanager and AOI app
- Improve identification speed and tracking speed of the AOI app
- Improve autofind feature of the AOI app
- Improve functionality of overlay feature on the software
- Mount Camera to onto back of monitor to create a virtual window
- Investigate alternative control methods