A New Technique for Automated Analyses of Raw Operational Videos

Requirements:

- The raw video data shall be video footages from a single conventional 2D camera and with no special lighting or fiduciary markers.
- The processed data shall contain the subjects' geometric information (position, movement, acceleration) relative to their operational environment and crewmates.
- A "tool chest" shall be available for visualization aids, velocity computations, etc. For visualization aids, the tool chest shall enable the user to specify areas or actions of interest. The software shall then locate, mark, count, etc. to indicate how many times the crew accessed a piece of hardware, traversed a path, reached above their heads, etc.

Desirable: 3D information extraction - ability to extract 3D information from the raw video to enable high-precision human motion analyses using the software's tool chest.

Phase I Deliverable: Algorithm
Phase II Deliverable: Functional software prototype