Evaluating Gestures to Be Used for Controlling an Unmanned Aerial Vehicle

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Abstract: This study concerns the usage of ergonomics to differentiate existing gesture controls to be used with an Unmanned Aerial Vehicle (UAV) in place of a traditional physical controller. Five sets of gestures were found by searching for videos of people controlling UAV's by using Microsoft Kinect. Each gesture was classified as a spatial command, and each command was then evaluated by using the Rapid Upper Limb Assessment (RULA), and the two with the lowest scores for each spatial command were then tested with 16 participants (eight males and eight females) for electromyographic muscle output. The participants also completed a brief survey concerning their preferences for each gesture command. The data was compiled and then the means of each gesture were compared by using paired t-test in order to determine the one that required the lowest amount of energy to perform. These gestures were then recommended as the best one for each command.

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