Gesture controlled Hexapod robot

We propose to build a 18 DOF hexapod that can be controlled wirelessly using a gesture control device. We plan to use different encoded gestures predefined to different motions for example, front, or back. The gesture based control provides an intuitive mode of interaction between the user and the robot.
We plan to use the raspberry pi for communication, arduino for hexapod locomotion and propeller for gesture controller.
We will use 3 motors per leg and have a total of 6 legs.
The gesture control device includes flex sensors and an accelerometer.

Working principle:

1. The gesture control device captures hand orientation and finger bends.
2. The data is processed to interpret gestures.
3. Processed commands are transmitted wirelessly to the hexapod.
4. The hexapod controller receives the data and translates it into motor actuation sequences.
5. The motors move in coordinated patterns (gait algorithms) to execute the required actions.