NURSING BED

Based on BCI

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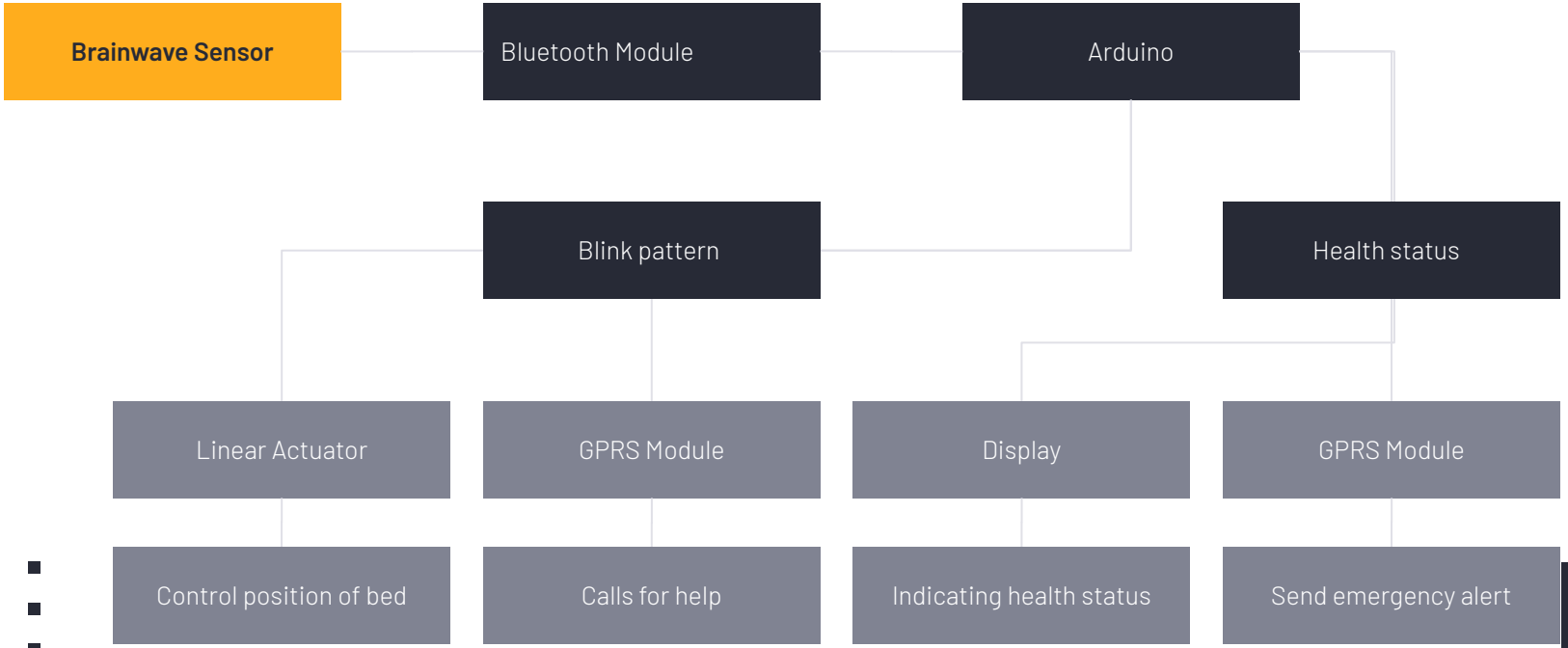
Proposed Product

Every bedridden patients in the community including a group of disabled individuals who are suffering from serious illness like paralysis requires help from others in one way or another. These patients are unable even to raise the position of the bed when they felt uncomfortable .Even for that purpose they will have to depend on others. Moreover if the patient wishes to call a person, it is really difficult for them to do so. Even 24x7 monitoring of the patient is not done properly.If anything happens ,when no one is around how the staffs and family members gets to know what is happening? These are some of the problem faced by the bedridden patients and we believe that we can provide a better and efficient solution to their problem.

The system that we proposed utilizes the widely and non-invasive EEG capture technology that can be appropriately applied on to a nursing bed system for bedridden patients. We used Neurosky brainwave sensors to extract EEG signals and artifacts data (Artifacts: Undesirable potentials that contaminate brain signals) . Hence eye blink patterns and mind conditions can be detected using signal processing and hence output can be given accordingly .In short we propose a BCI based system, which is simple to implement and easy to use, by taking the advantage of EEG artifacts. We will be using linear actuator controlled by blink patterns for positioning the bed.And for monitoring health status of patient brainwave and heart beat artifacts are used.

Block diagram



Applicability of Solution

Since nurses are available in the hospitals, they don't take this issue much seriously. Infact the nurses feels stressed while treating bedridden patients especially the paralyzed ones.Secondly various devices are used only to monitor the patients health status. Alerting mechanisms are not provided. In some hospitals monitoring of the bedridden patients are generally through a surveillance camera.Even a "sitting" expert will feel awkward when sitting in front of the footage monitor 24 hours a day. A huge ransom has to be paid to the hospital for doing these kinds of activities.

What about the bedridden patients residing in houses? The family members even face difficulties in caring them Why face these much issues when you can automate a Nursing bed which does all the purpose at a very low cost?

Since the design of the product is compact and user friendly the proposed system will gain a huge demand in the market.

Manual functioning beds are available for raising the position. But every time a human intervention will be required. Not only that health monitoring systems are available in hospitals, but still human interventions are needed for finalizing the reports. Continuous surveillance of the patient is done through camera but as mentioned earlier several requirements are to be met. Moreover medicine are given by the nurses and there are no alert mechanisms are available in 90% of the hospitals.