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Implementation of the F-B function comparison on the body movement

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Abstract

To compare body signal, was designed the F-B function system on the body movement for the comfortable state. To detect subject of the normal state, was decided on the base of physical signal in the body movement. There are to detect the condition of Vision, Vestibular, Somatosensory and CNS. Vision condition was verified a variation of greater average (Vi-$\Phi_{AVG-AVG}$) was presented slightly greater at 17.424±9.65 unit. Vestibular condition was identified a variation of slightly greater average (Ve-$\Phi_{AVG-AVG}$) was presented at 9.068±1.478 unit. Somatosensory condition was checked a variation of smaller average (So-$\Phi_{AVG-AVG}$) was presented slightly smaller at 2.79±0.419 unit. CNS condition was confirmed a variation of diminutive smaller average (C-$\Phi_{AVG-AVG}$) was presented slightly larger at 0.557±0.153 unit. As the model depends on the F-B function system of body movement, average values of these perturbation were computed F-B function comparison data. These systems will be to infer a data algorithm and a data signal processing system for the evaluation of the stability.

Keywords: *F-B function system, body movement, variation of average, static posture, signal processing, data acquisition system*

1. Introduction

Body movement considerable a frequency was associated with a subject on the sway, bend and twists [1]. The body movement Balance was perturbed through the showed vertical, horizontal translations displacements or a combination thereof [2]. For the fixed condition, an unusual way of measuring was to test subjects, and there was advised to present a axle of state as a possible forward and backward source of afferent information for postural condition of maintain [3].

2. Related research of f-b function signal parameter

Their mechanical device was a simple system for a computing unit, sensors, that they are designed to transmit data by the situation condition and vibration [4]. System of networks was used frequency that the

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most widespread check of communication [5].

3. Proposed Method of f-b function signal

A. System of F-B function signal

This system keeps normally when the body condition can deal with it to generate a forward and backward case. To reduce largely body of exercising states in the system, physical data achieved a body movement of equivalence of fluctuation with the physical signal. The proposed system in Figure 1 are adverted the architecture. The system was composed of data gateway and serve system [6-8].

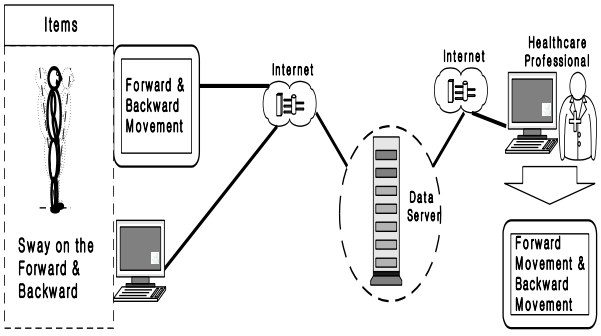

Figure 1. Proposed of F-B function system for physical signal on the body movement.

B. Algorithm of F-B signal

In Figure 2 was to be presented an algorithm for a signal process that body movement was similar to refer the specification by the rectified balance. The specification of a signal process was included the definition of the inputs that was applied to the HF_HB signal possibly from the HF_HB value in response to particular received outputs.

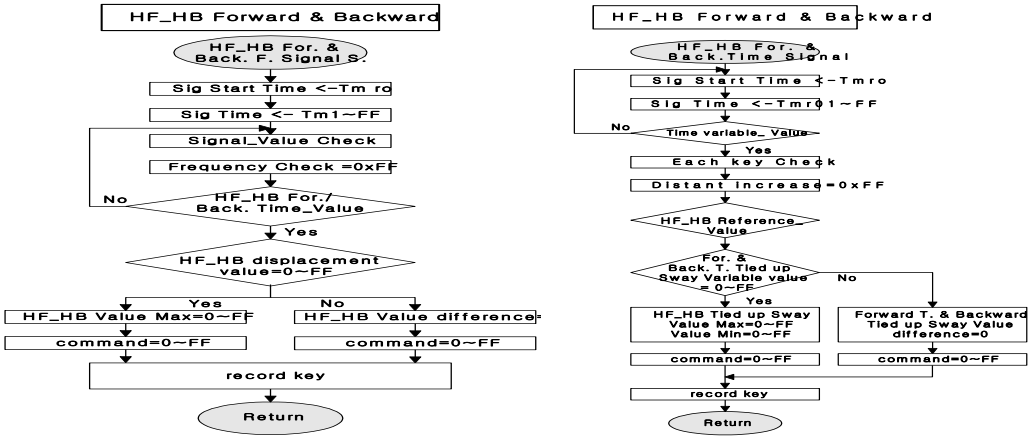

Figure 2. Algorithm of F-B function system for physical signal

Several algorithms called a communicating of HF_HB body movement modules. We addressed the item of a physical signal systems described in a several time model. Frequency of forward and backward signal was a transition from HF_HB_time_value to HF_HB displacement that was *"Yes"* as an output action, and a value "Max" condition, while was take the transition from HF_HB displacement to HF_HB-Val-difference executed on input *"No"* at any time, and reset to zero command value. A distinction between body movement signal case and HF_HB displacement case was all made. The most important aspect was the form

of the connection through which the frequency case interacted with the HF_HB value.

The time variable of forward and backward time point was a transition from Reference_value to HF_HB_T variable value that has *"Yes"* as an output condition, and a value "Max-Min" condition, while the transition from HF_HB_Tied-up variable value to Tied-sway-variable difference that was to be execute on input *"No"* at any time, and reset to zero command value. A clear distinction between body movement time signal case and reference displacement case was all made. The most important aspect was the form of the connection through which the frequency case interacts with the HF_HB value of body movement. considerable a frequency was associated with a subject on the sway, bend and twists [1]. The body movement Balance was perturbed through the showed vertical, horizontal translations displacements or a combination thereof [2]. For the fixed condition, an unusual way of measuring was to test subjects, and there was advised to present a axle of state as a possible forward and backward source of afferent information for postural condition of maintain [3].

4. Results and Discussion

A. Database

Comparison of Vision condition was determined to a variation of the Vi-$\Phi_{AVG\text{-}MAX}$ and Vi-$\Phi_{AVG\text{-}MIN}$ (Figure 3). Comparison of vestibular condition was determined to a variation for the Ve-$\Phi_{AVG\text{-}MAX}$ and Ve-$\Phi_{AVG\text{-}MIN}$ (Figure 4).

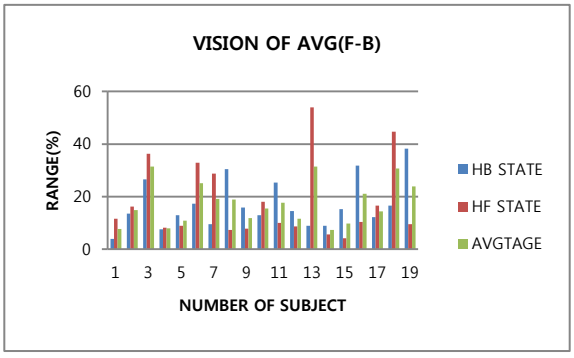

Figure 3. Average data vision condition by the F-B function system

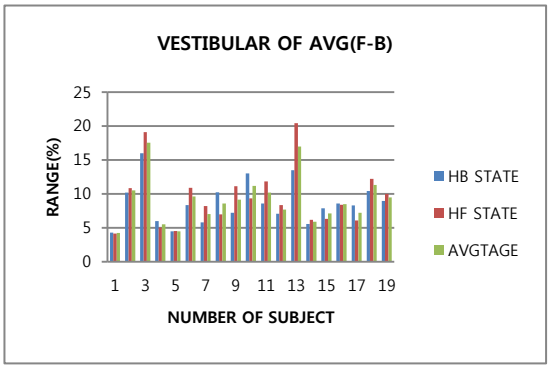

Figure 4. Average data vestibular condition by the F-B function system

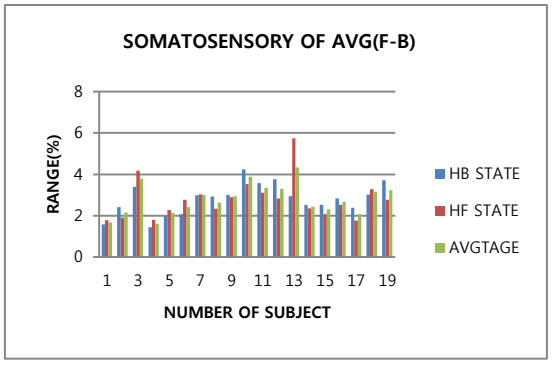

Figure 5. Average data somatosensory condition by the F-B function system

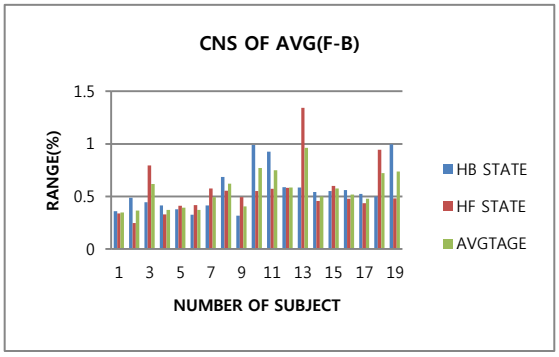

Figure 6. Average data CNS condition by the F-B function system

Comparison of somatosensory condition was determined to a variation for the So-$\Phi_{AVG\text{-}MAX}$ and So-$\Phi_{AVG\text{-}MIN}$ (Figure 5). Comparison of CNS condition was determined to a variation for the So-$\Phi_{AVG\text{-}MAX}$ and So-$\Phi_{AVG\text{-}MIN}$ (Figure 6).

B. Evaluations

As shown in Figure 7, the performance evaluation results of the body movement for the balance. The signal data was estimated a physical signal of forward-backward movement on the stable state. To compare body signal, was designed the F-B function system on the body movement for the comfortable state. To detect subject of the normal state, was decided on the base of physical signal in the body movement. There are to detect the condition of Vision, Vestibular, Somatosensory and CNS.

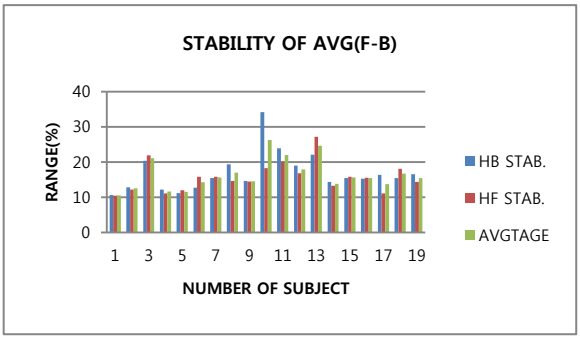

Figure 7. Average data stability condition

5. Conclusion

To compare body signal, was designed the F-B function system on the body movement for the comfortable state. To detect subject of the normal state, was decided on the base of physical signal in the body movement. There are to detect the condition of Vision, Vestibular, Somatosensory and CNS. As the model depends on the F-B function system of body movement, average values of these perturbation were computed F-B function comparison data. These systems will be to infer a data algorithm and a data signal processing system for the evaluation of the stability.

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