

## **Development of Cognitive and Psychomotor Task for EEG Application with Matlab-based GUI**

### **Abstract**

A binary masking is often seen as a medium to enhance speech signal especially in hearing aid and speech recognition applications due to its simplicity and efficient approach for supervised source separation. High intelligibility could be obtained by applying the binary time-frequency masking to noisy speech signal. Since the issue of linear filtering algorithms might affect the intelligibility of noisy speech signal, so, this paper presents the binary time-frequency mask for improved Malay speech intelligibility at low SNR condition. The clean Malay speech signals that were contaminated by car and train noise with different signal to noise ratio (SNR) and local criterion (LC) level in forming the binary mask are analysed. The performance of intelligibility improvement was evaluated using a normalized sub band enveloped correlation (nSec). Overall results showed that the proposed approach produces slightly improved speech intelligibility at low SNR value.