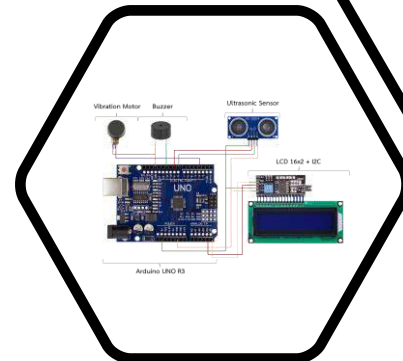
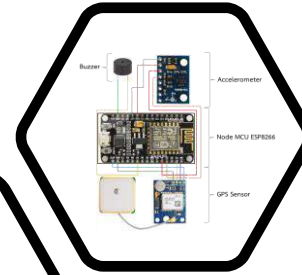




Development of a smart cane for the visually impaired

- **Inventors** : Phumiphat Mangkorndeshsakul, Apikit Tunsudjareonying, Angsuthorn Ngamprasit and Thanatat Intisane
- **Guidance teacher** : Suphachai Thipyorlaeh and Prasobsuk Prachyakul
- **Gifted program** , Saint Louis School Chacheongsao, Thailand





 visually impaired



The idea of creating a smart can for blind people



White Cane : advantages



- Increased safety for those who are blind.



- Need to rely on others.



Smart cane : advantages



- Notifies you of impending dangerous.

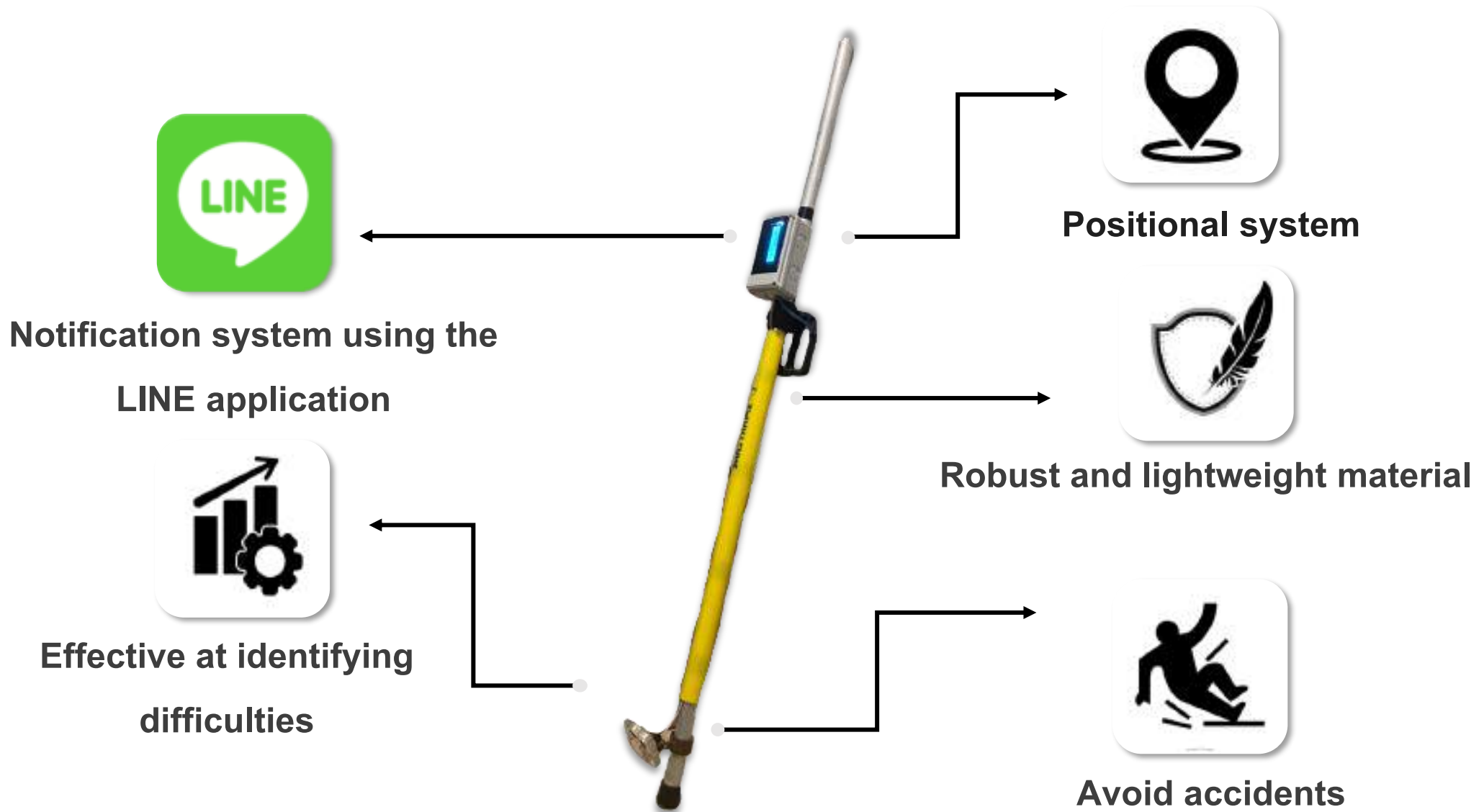


- Increased safety for those who are blind.



- There's no need to rely on others.

Features of the smart cane for the blind



Smart cane for people who are blind: their operation

White cane >>



Smart cane >>



50 cm



LINE Notification

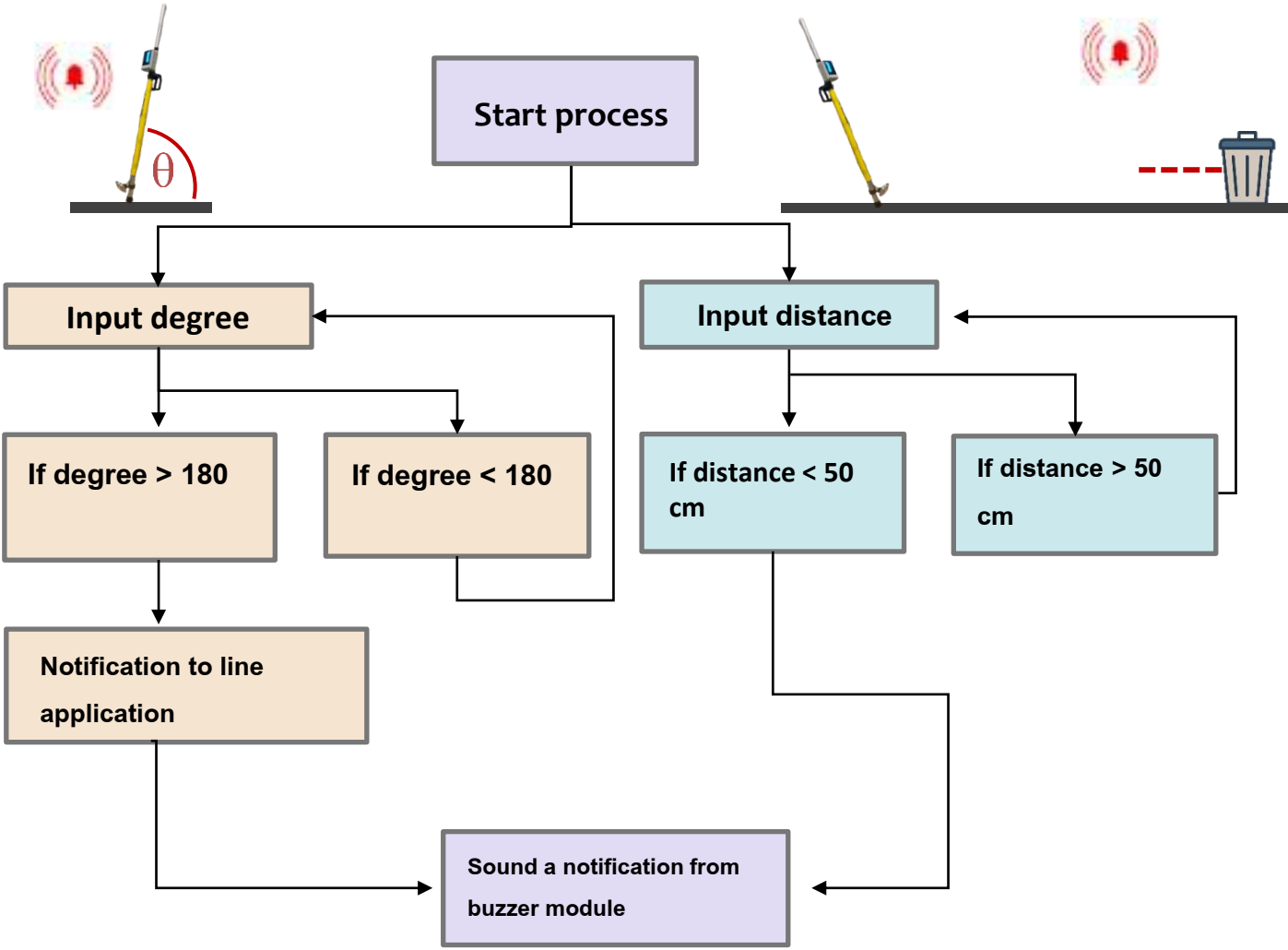
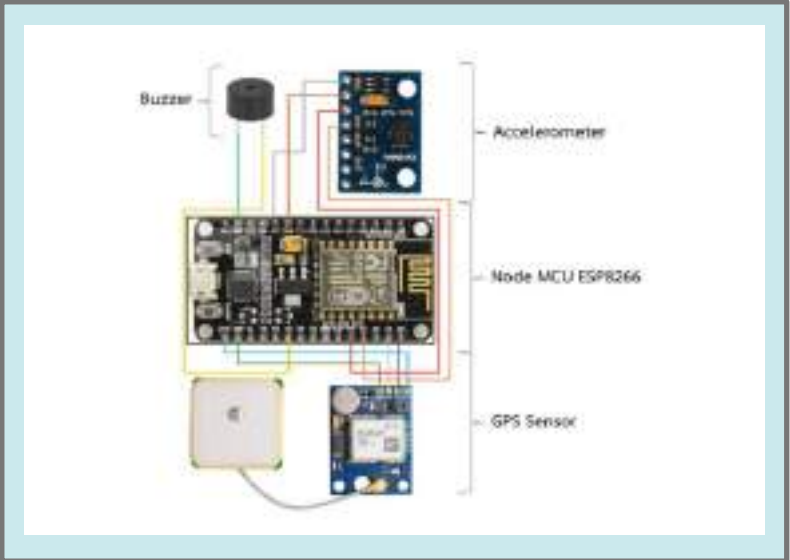
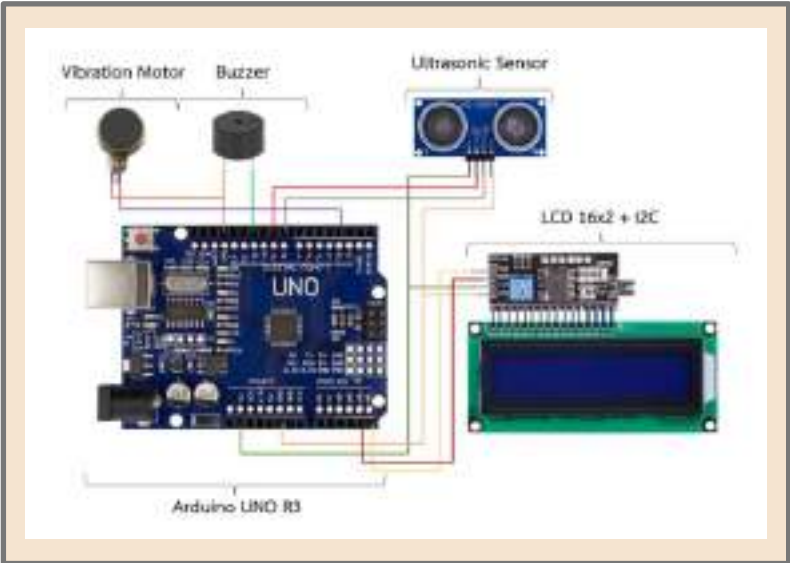




LINE Notification



Smart cane for people who are blind: their operation

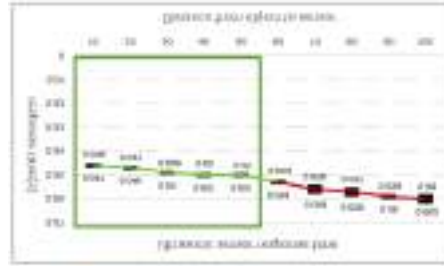


How to evaluate intelligent walking aids for those who are blind.

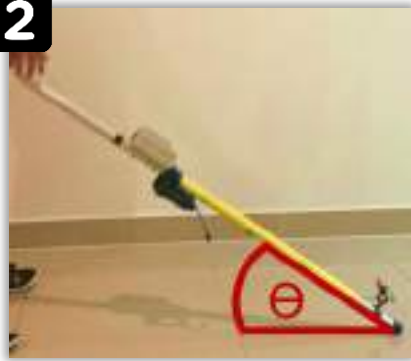
1



Evaluating the distance that influences the ultrasonic sensor's response time.



2



The LINE NOTIFY notice is being tested when the stick falls.



3

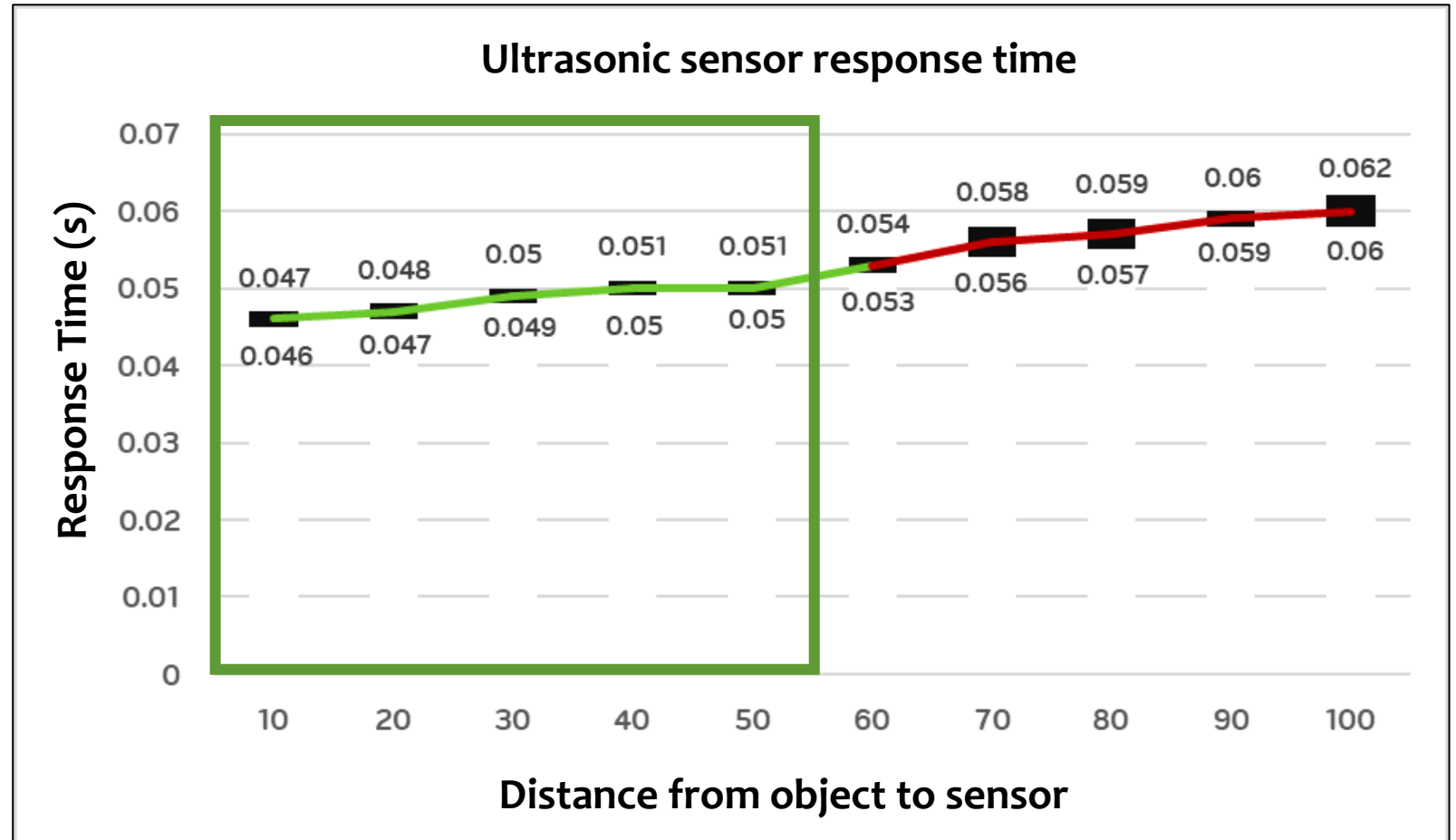


The Association of the Blind's test measuring user satisfaction with smart canes.



No	Item	Satisfaction				
		Very Satisfied	Satisfied	Not Satisfied	Very Dissatisfied	Total
1	Smart cane	2	1	1	1	5
2	Smart cane	1	1	1	1	4
3	Smart cane	1	1	1	1	4
4	Smart cane	1	1	1	1	4
5	Smart cane	1	1	1	1	4
6	Smart cane	1	1	1	1	4
7	Smart cane	1	1	1	1	4
8	Smart cane	1	1	1	1	4
9	Smart cane	1	1	1	1	4
10	Smart cane	1	1	1	1	4
11	Smart cane	1	1	1	1	4
12	Smart cane	1	1	1	1	4
13	Smart cane	1	1	1	1	4
14	Smart cane	1	1	1	1	4
15	Smart cane	1	1	1	1	4
16	Smart cane	1	1	1	1	4
17	Smart cane	1	1	1	1	4
18	Smart cane	1	1	1	1	4
19	Smart cane	1	1	1	1	4
20	Smart cane	1	1	1	1	4

Response time testing outcomes related to distance



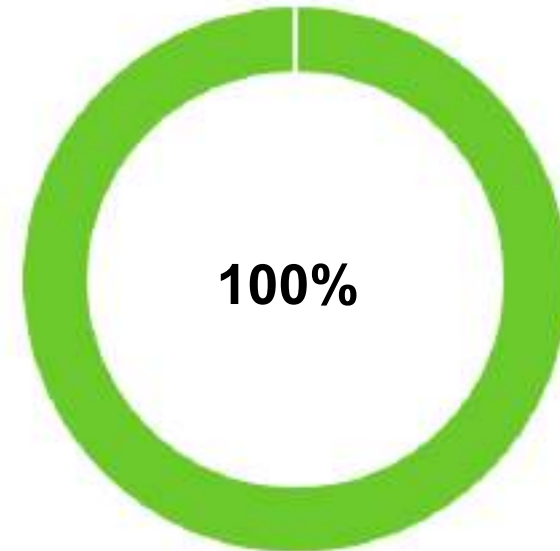
A graph illustrating how distance affects reaction time

Test results for the LINE NOTIFY cane-fall notification system



LINE NOTIFY cane-fall notification system

The effect of the line notification when the cane falls 10 times in total.



■ response ■ Not response

The outcomes of all 10 fall alerts are displayed in a pie chart.

Results of satisfaction studies from conducting tests on visually impaired people

- 3** Satisfaction with the use of a smart cane for visually impaired people from the Blind People's Association of the province of Chachoengsao to evaluate the safety performance of a smart cane.

Table 1 : Show the satisfaction assessment of the visually impaired to the use of smart cane.

Satisfaction Assessment	Gender			
	man		woman	
	Average score	Satisfaction levels	Average score	Satisfaction levels
Usability	3	Medium	3	Medium



Inventors



P. Mangkorndeshsakul



A. Tunsudjareonying



A. Ngamprasit



T. Intisane

Guidance teacher

Suphachai Thipyorlaeh and Prasobsuk Prachyakul