



DE VINCI
INNOVATION
CENTER

How fully use space to change perception

30/03/23 - Second semester's defense

Etienne Pommel

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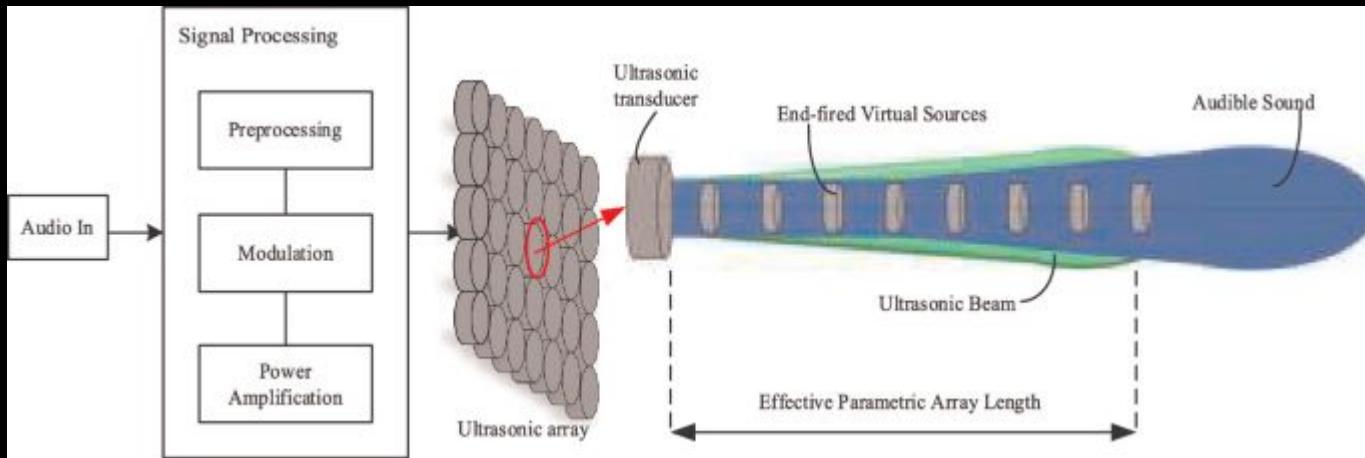
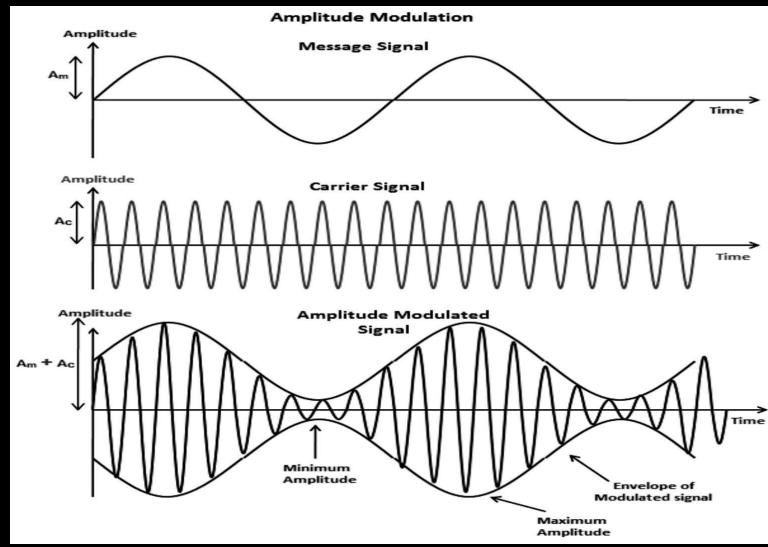
01| What was done

02| What will be done

03| Axes of development

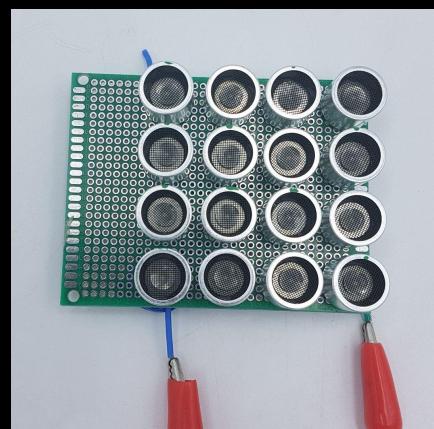
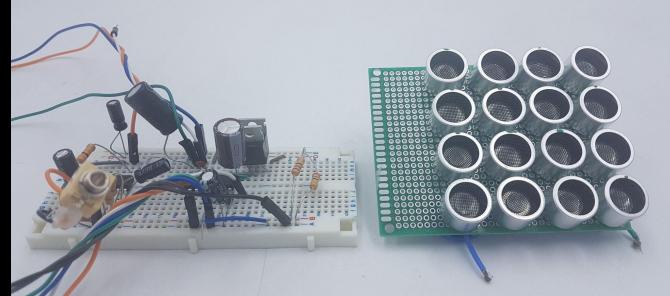
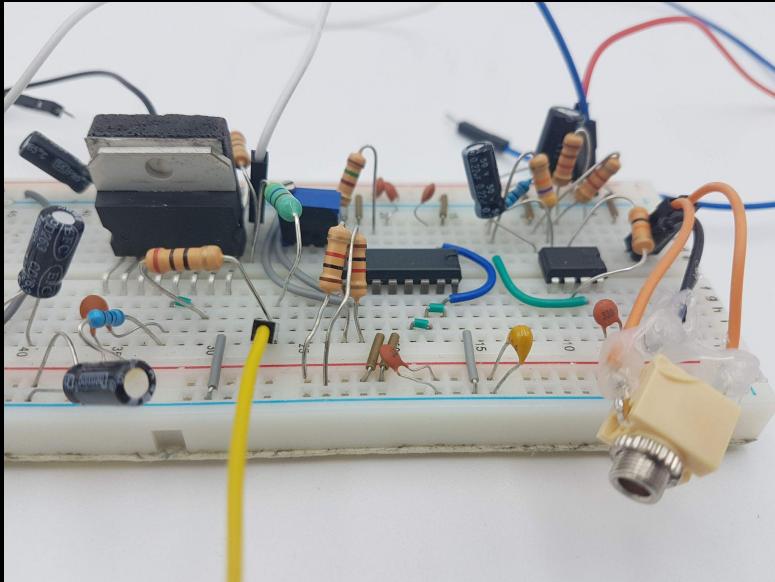
01| Work done

Principle of Ultrasonic Directional Speaker (UDS)



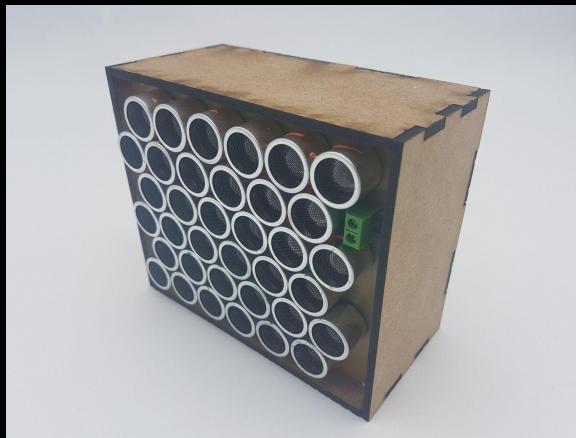
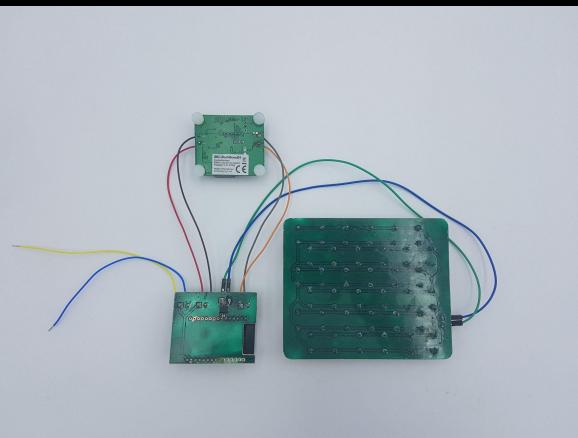
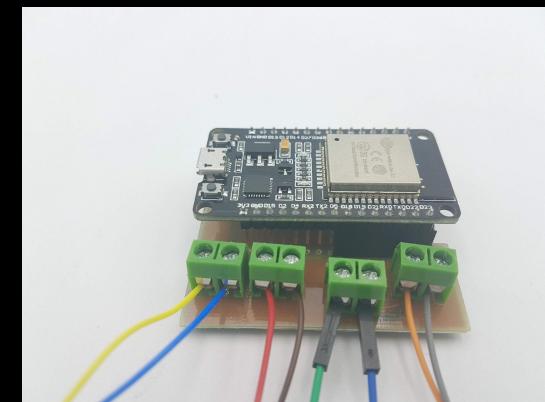
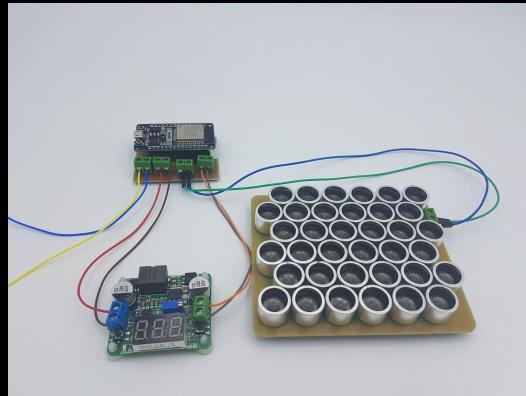
01| Work done

Prototype :



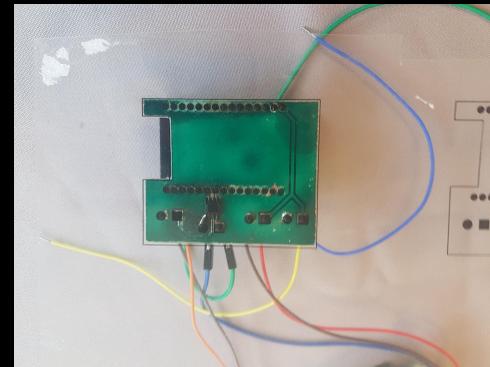
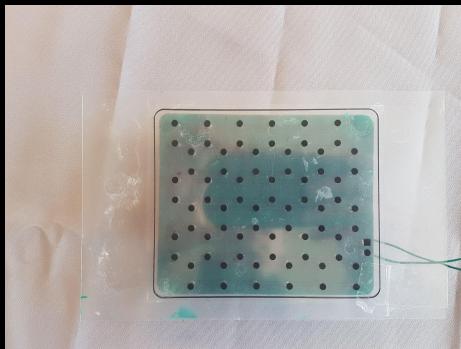
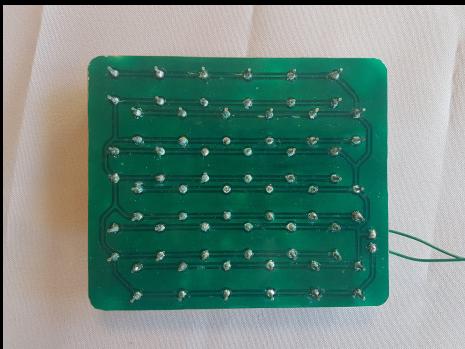
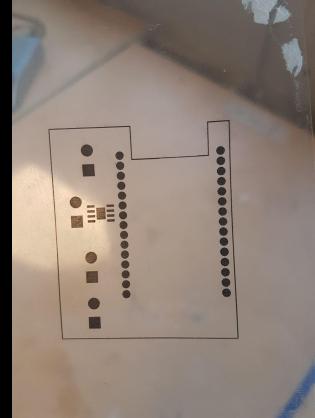
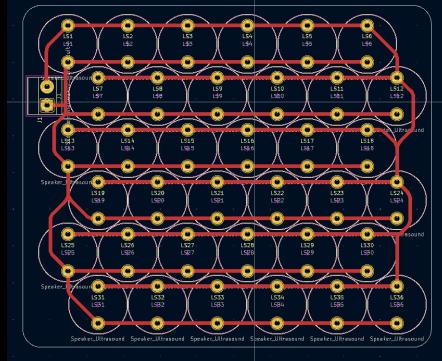
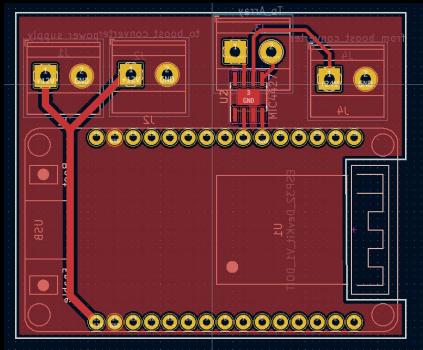
01| Work done

bluetooth UDS :



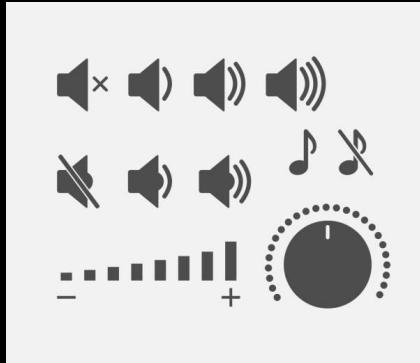
01 | Work done

Printed Circuit Board (PCB) :



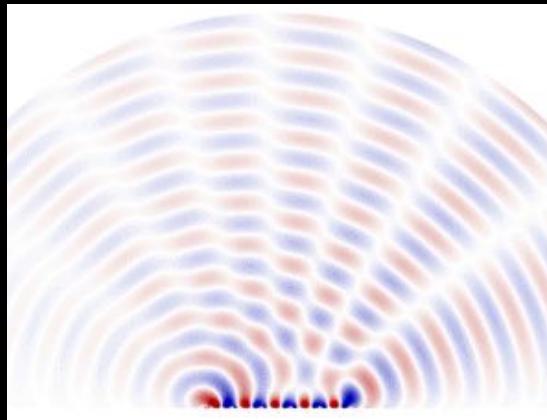
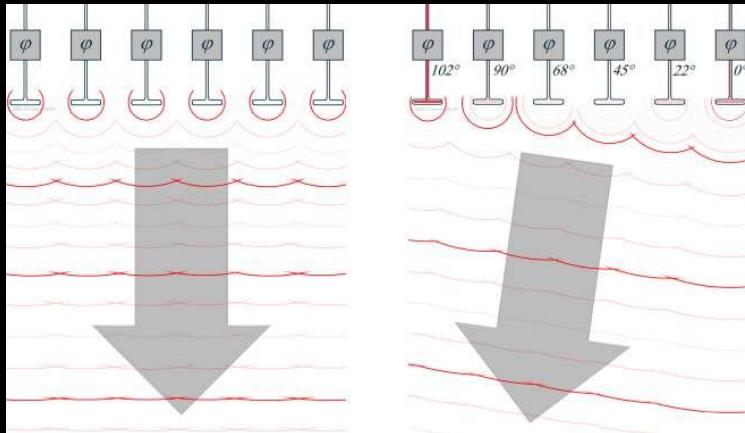
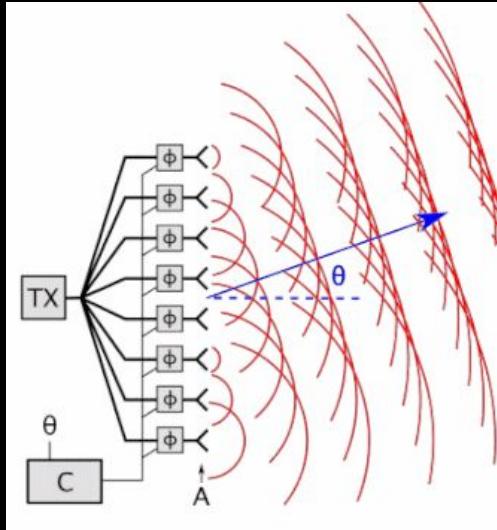
02| Work to be done

Alimentation Casing and Code



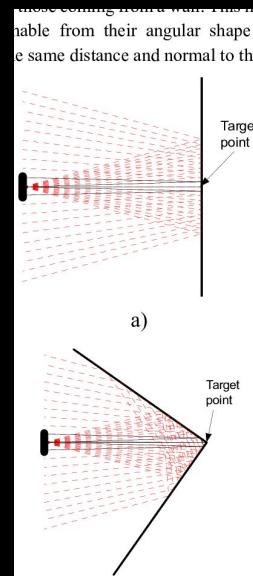
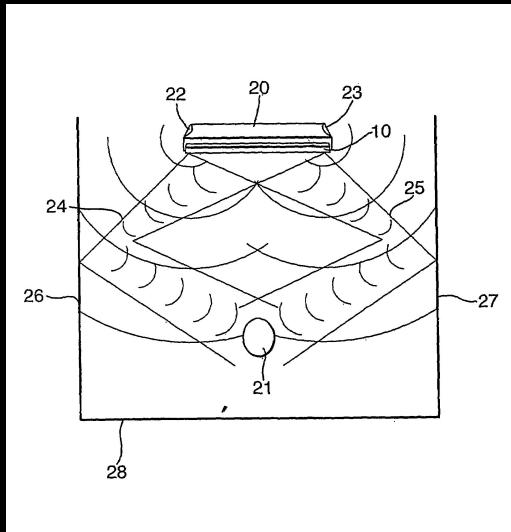
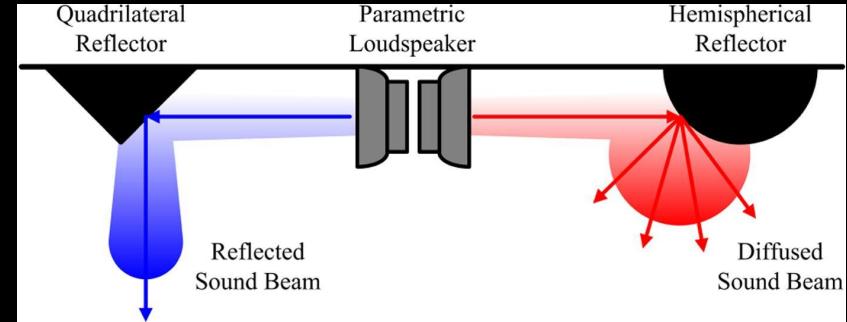
02| Work to be done

Phase Shift



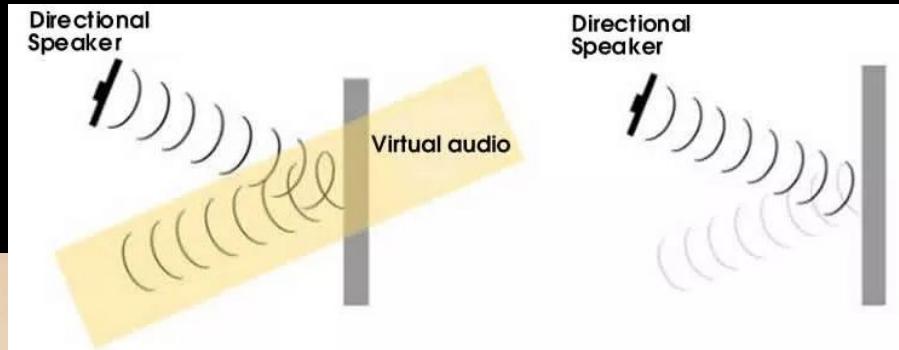
03| Axes of Development

Research :



03| Axes of Development

Startup :



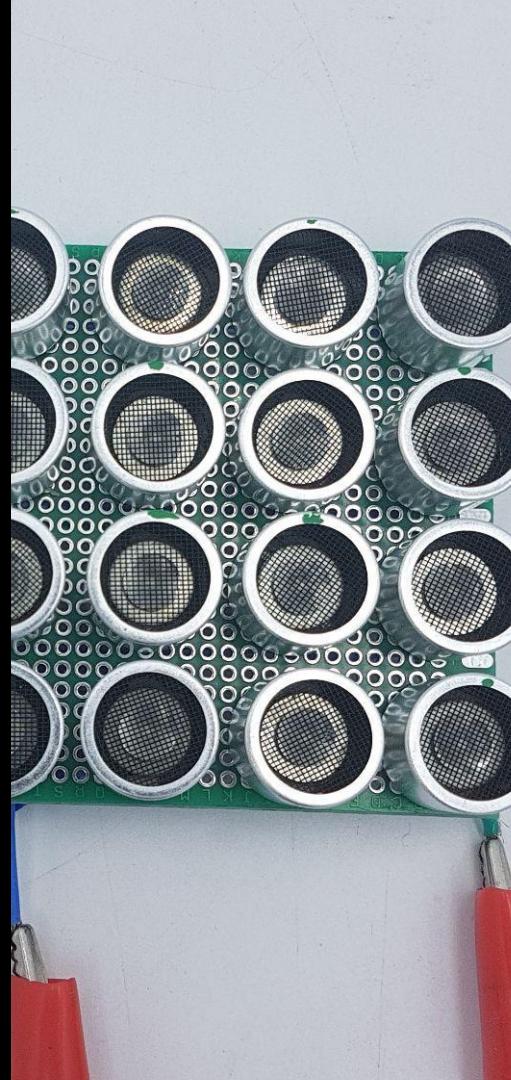
03| Axes of Development

Installation/Performance :



Conclusion

- bluetooth ultrasonic speaker
- make portable add functionality
and phase shift
- development axes



Thank you for your attention!

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