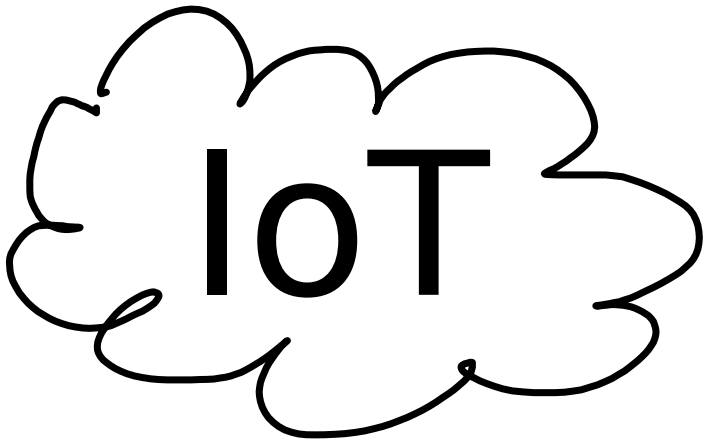
Low-power wireless networks

Mateusz Banaszek

13 April 2019

Internet of Things



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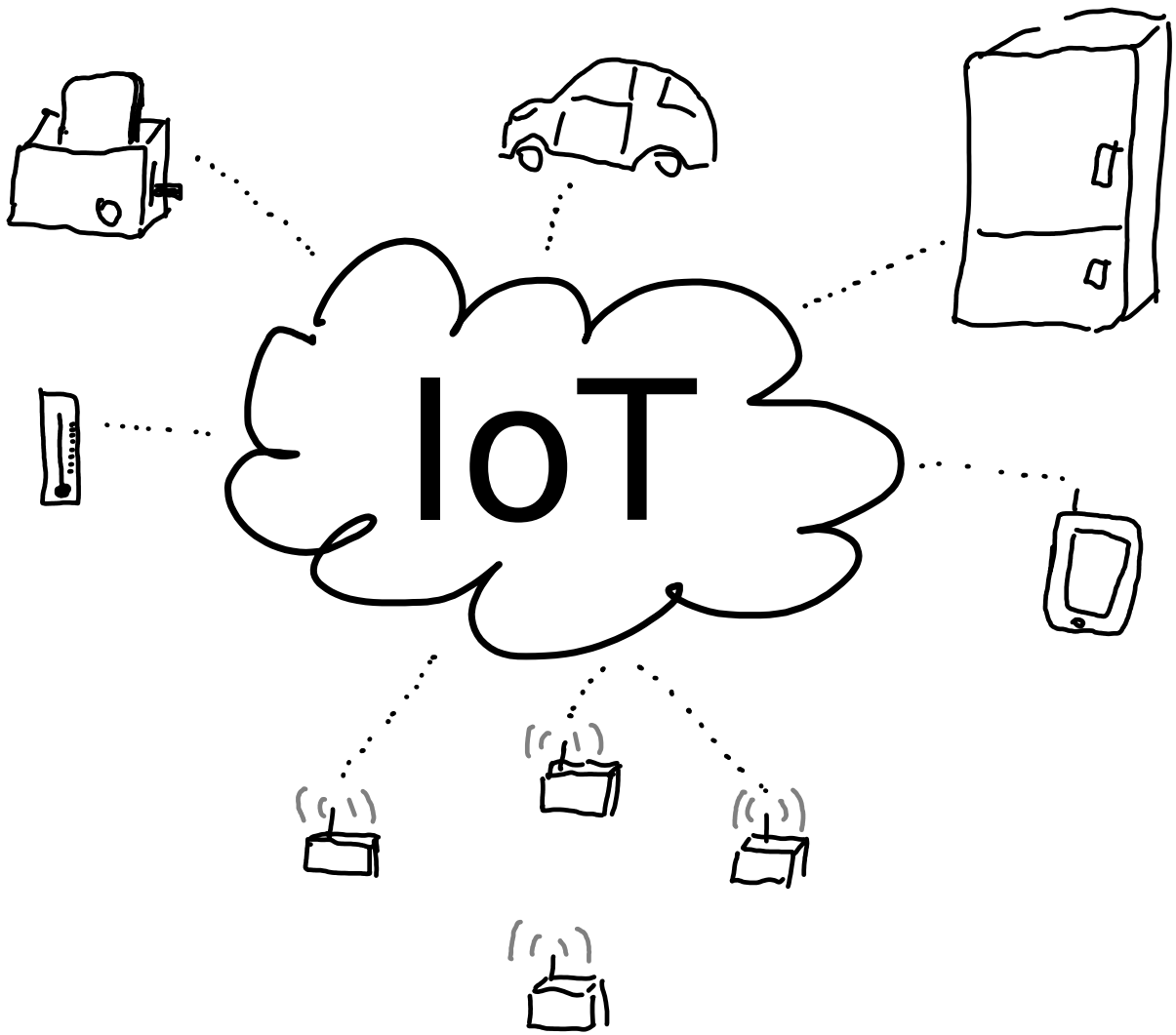

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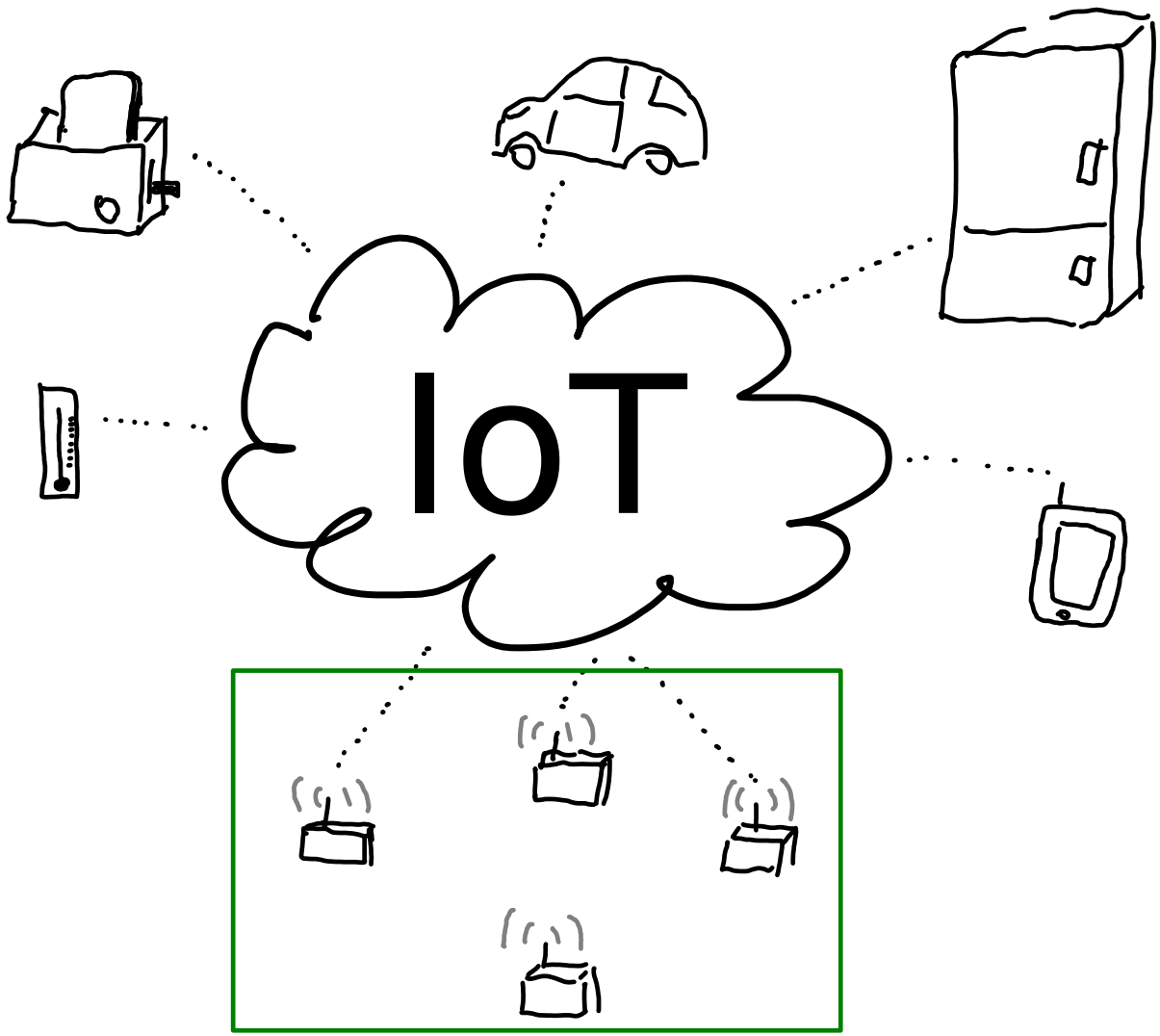
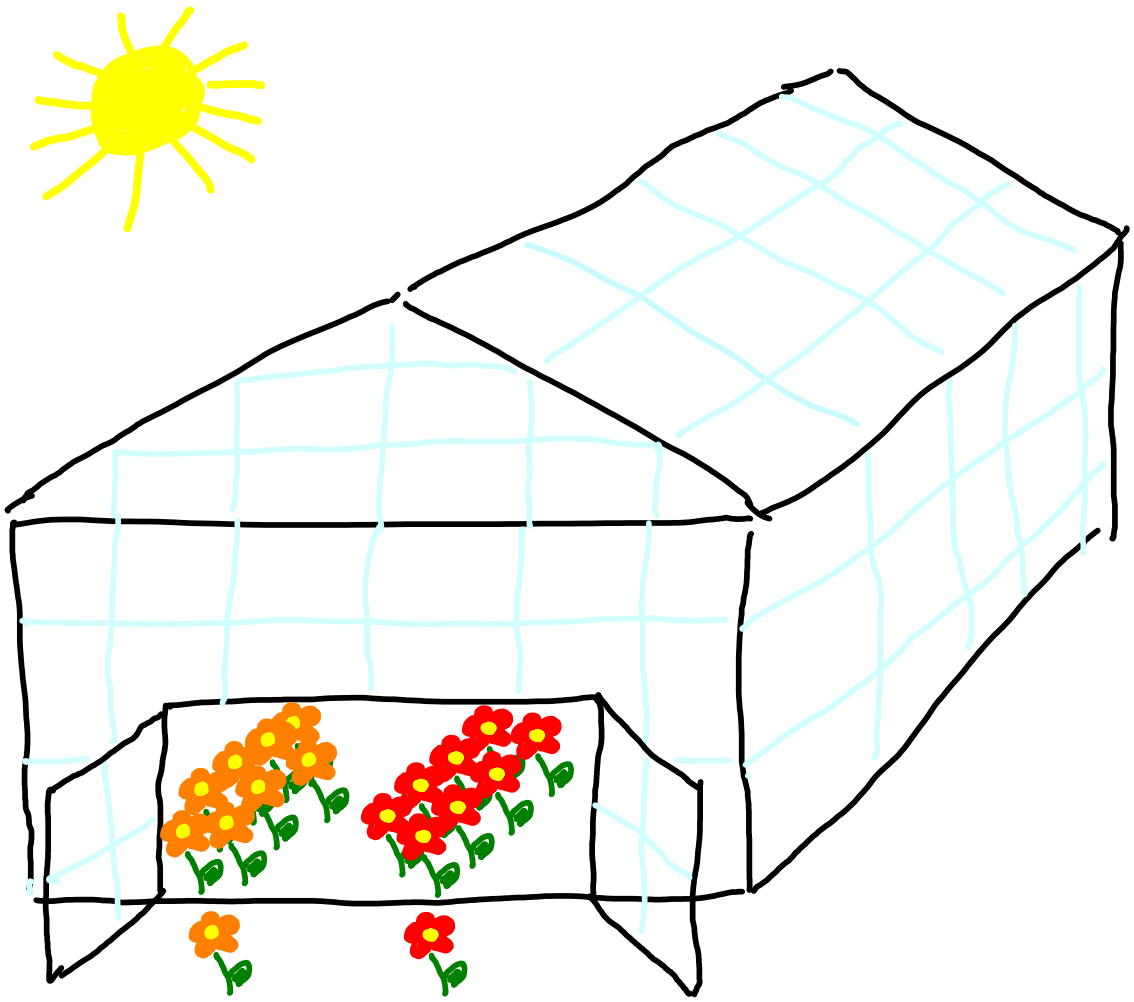


Low-power wireless networks

Motivation



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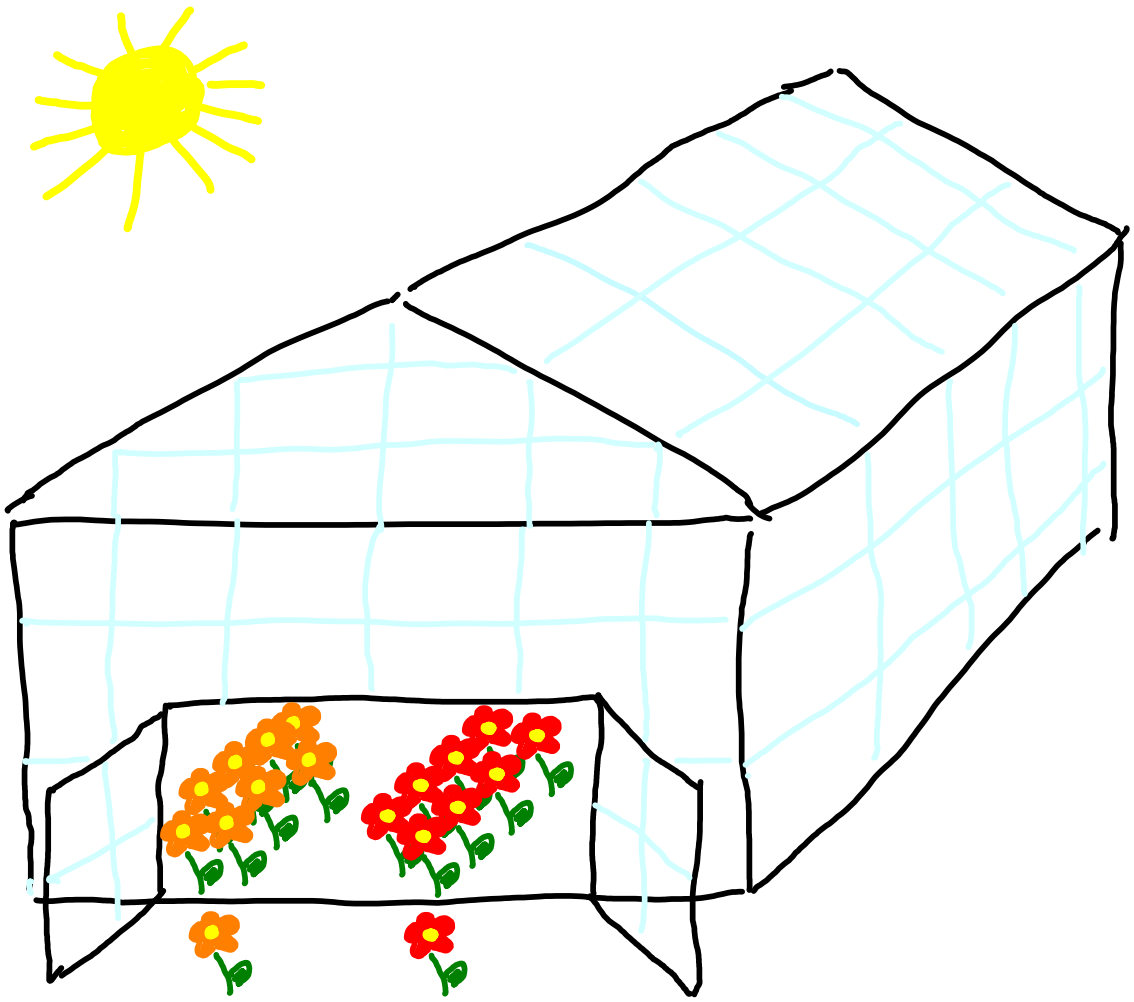

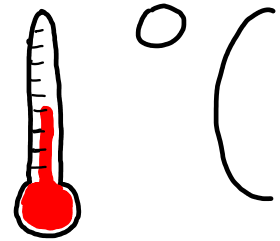

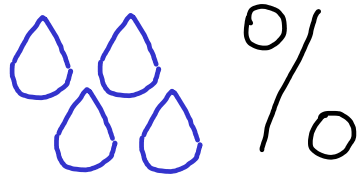

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cheap
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low-cost operation

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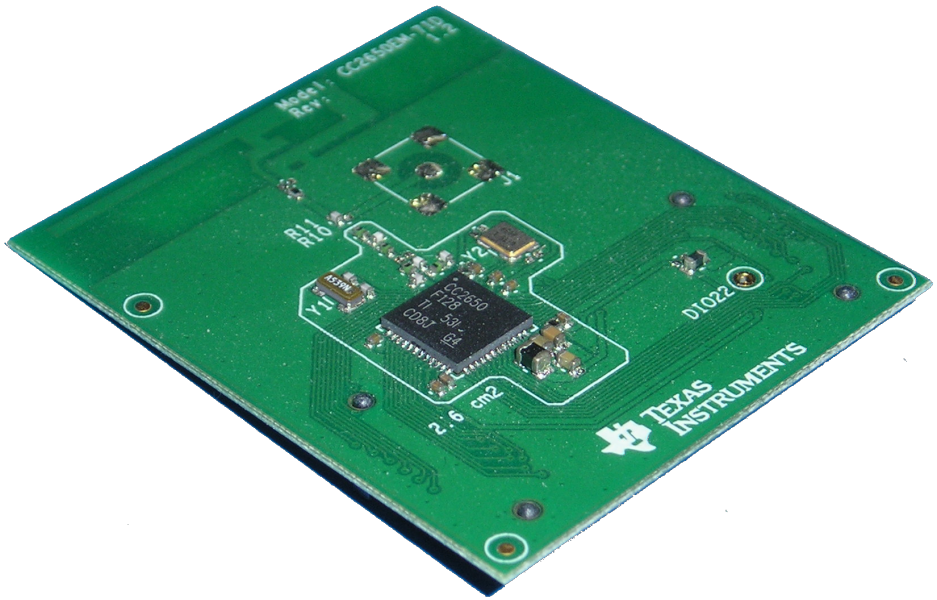
Low-power wireless network

Texas Instruments CC2650



TI CC2650:

- 48 MHz ARM CPU
- 128 KB Flash
- 20 KB SRAM
- **2.4 GHz Radio**
- ...

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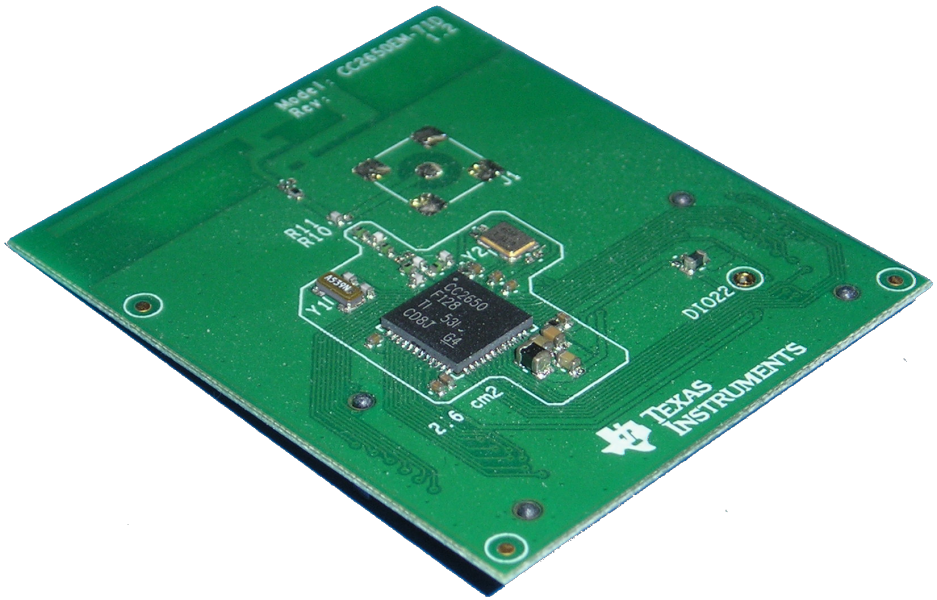

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Transmission 6 mA

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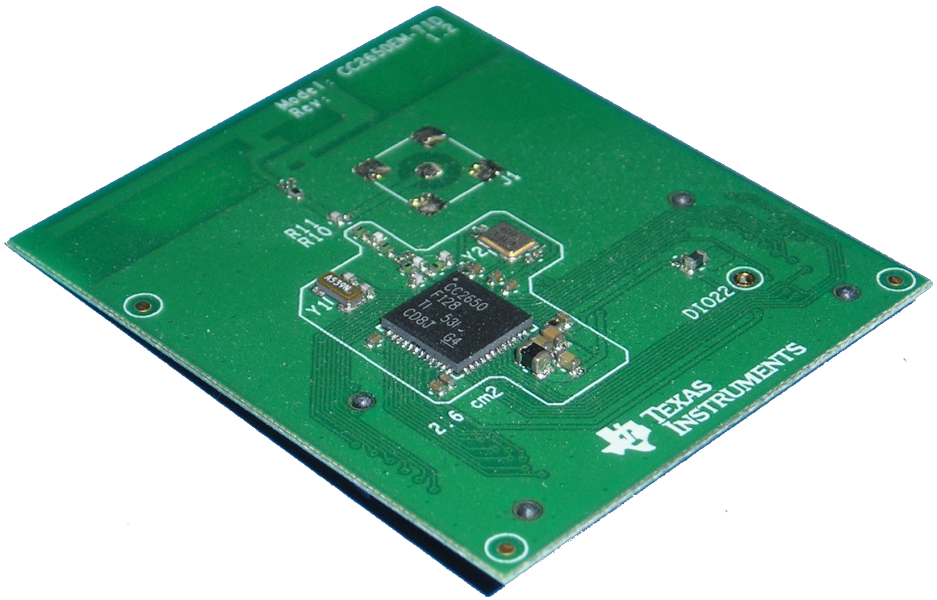

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iPhone's battery $\rightarrow$ 12.5 days

Duty cycling

$$avg = 6mA \cdot A + 0.003mA \cdot S$$

$$A + S = 1$$

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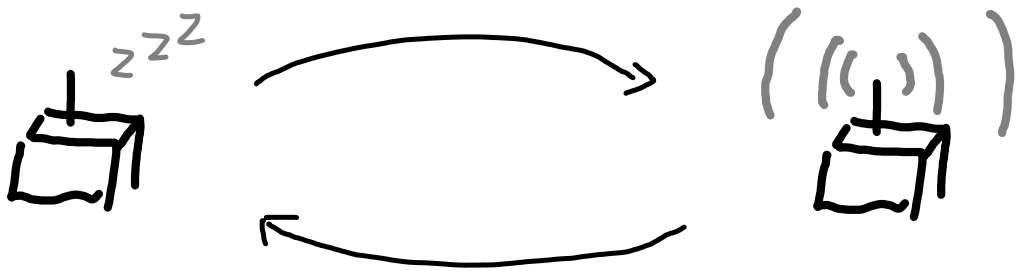
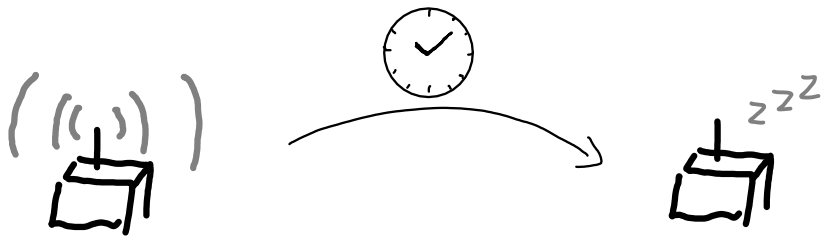


Network challenges

When?



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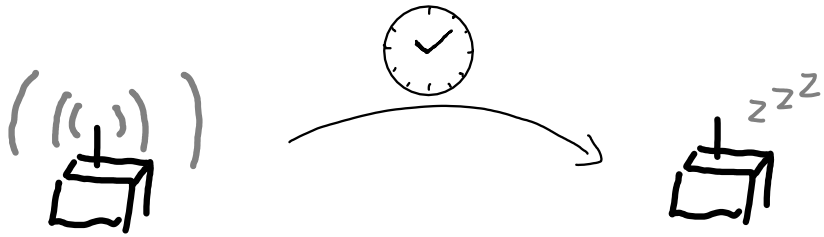

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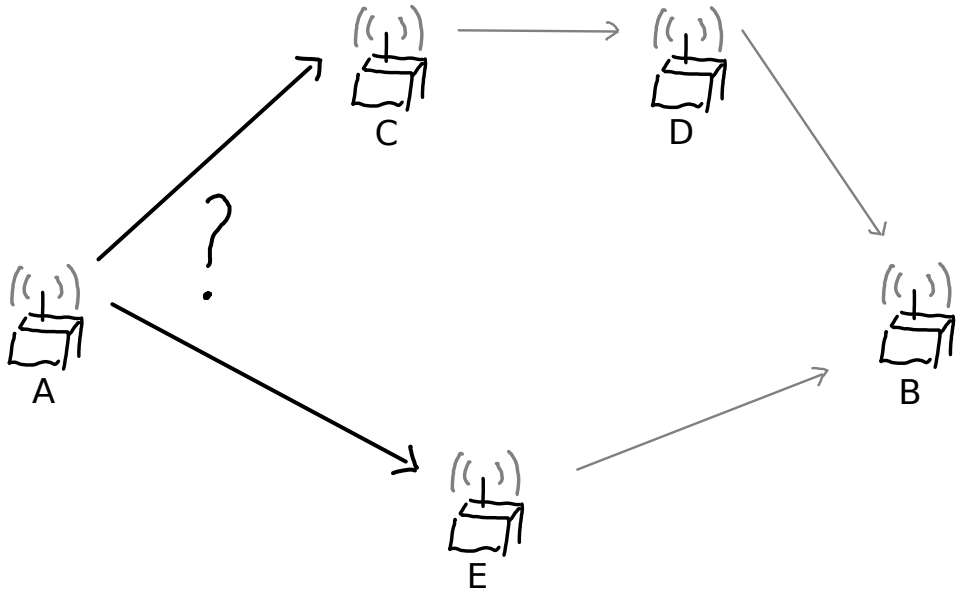
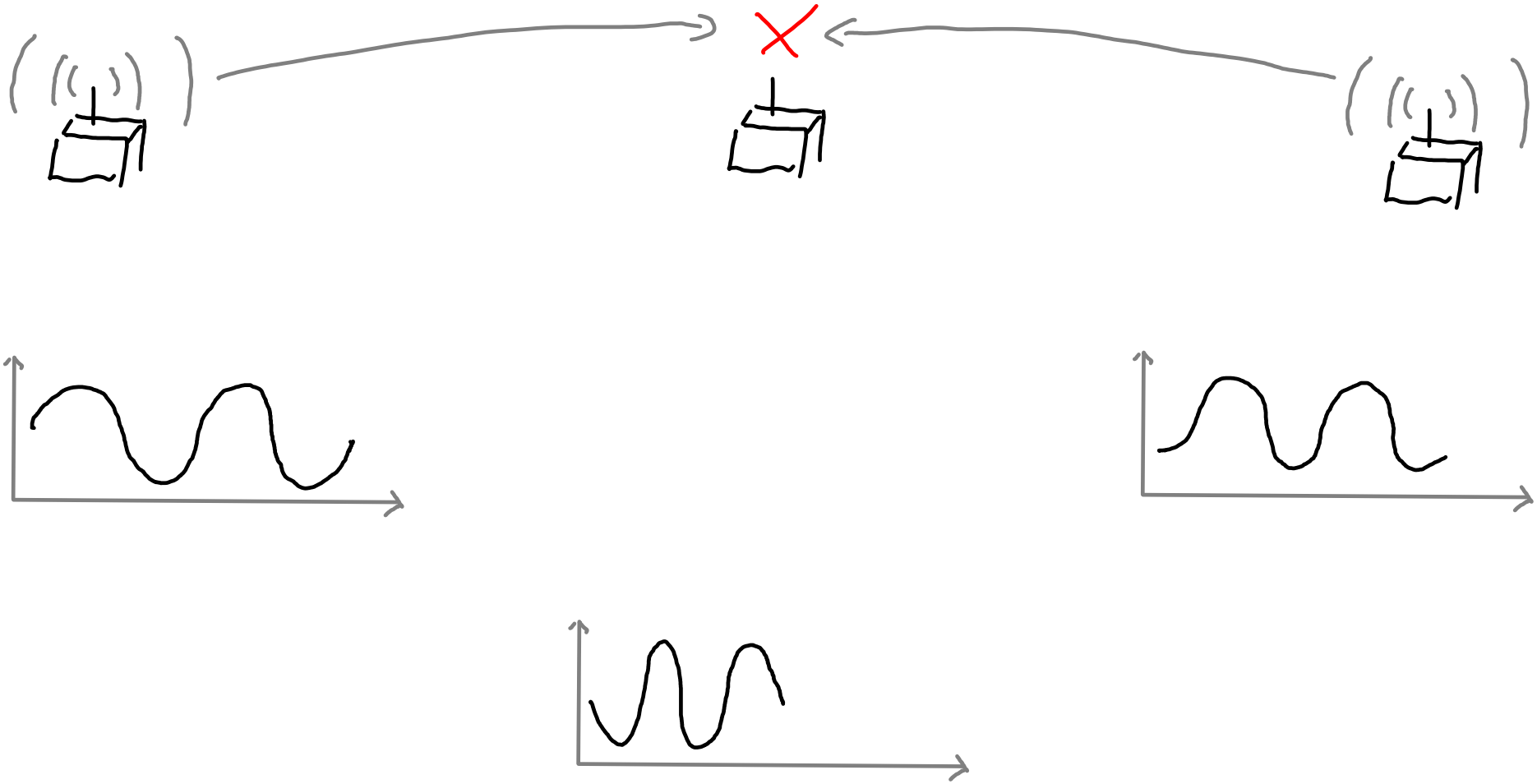


Concurrent transmissions



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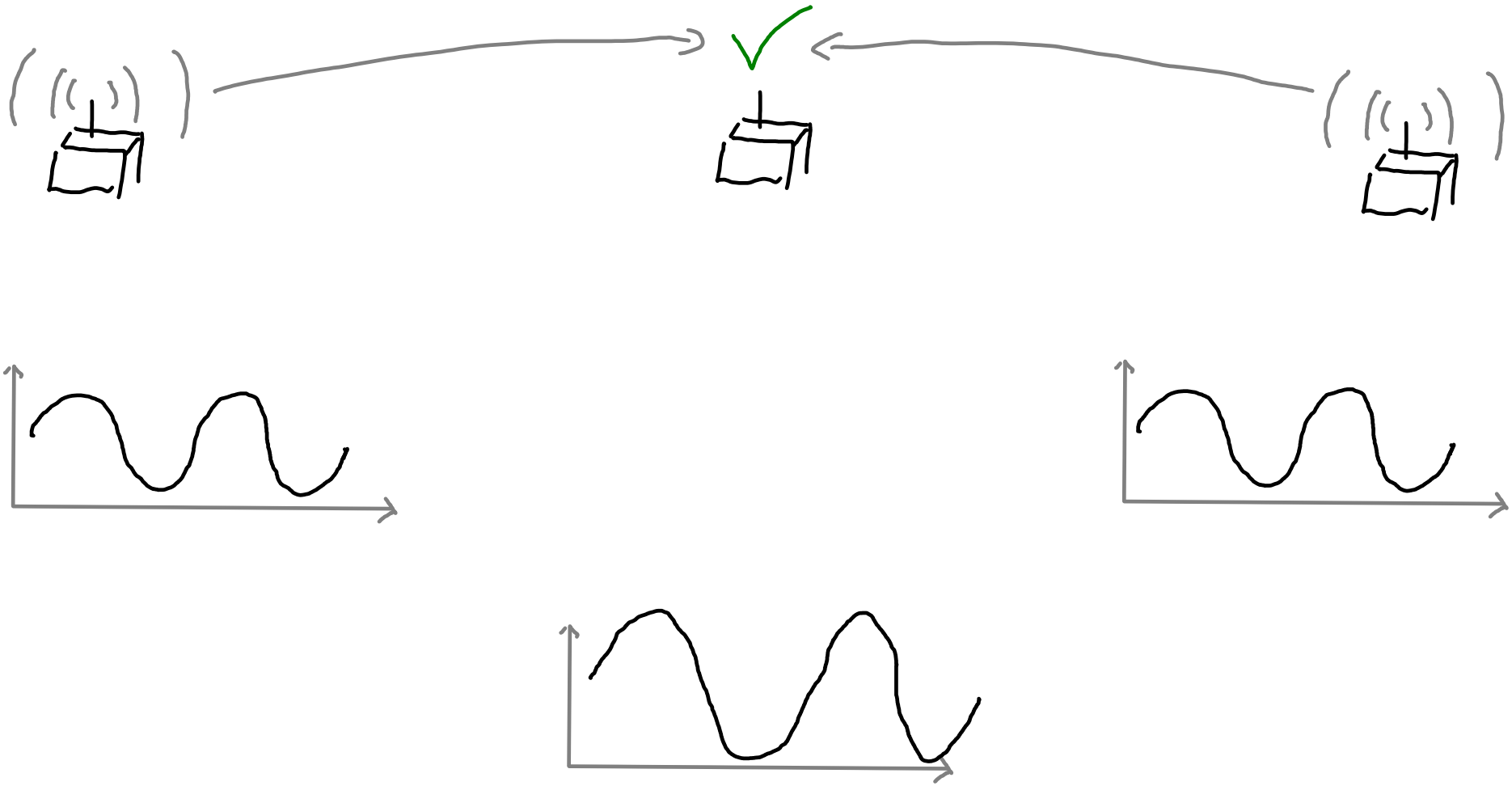

Summary

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Thank you!