Self-Monitoring in Dynamic Wireless Networks

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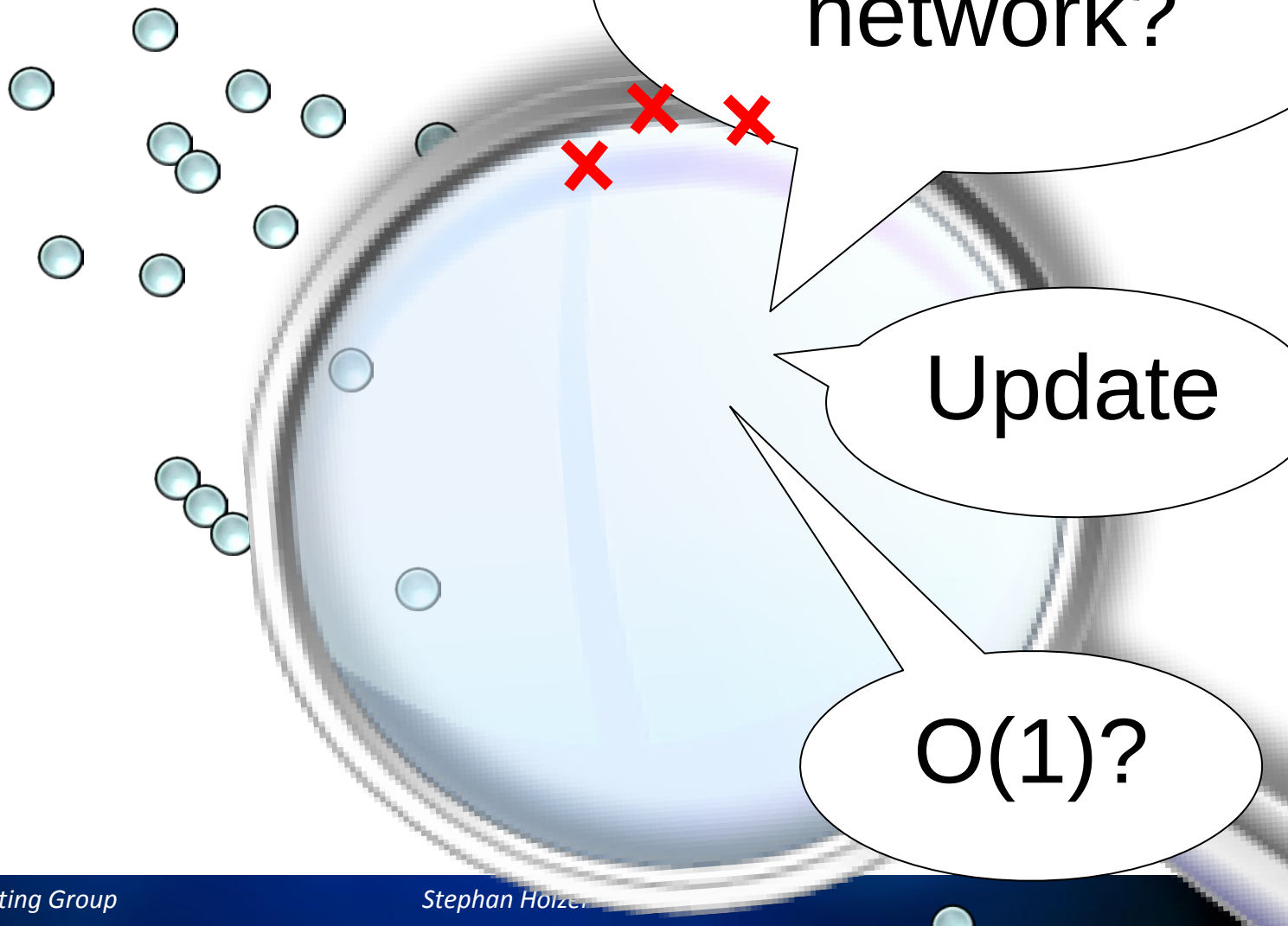
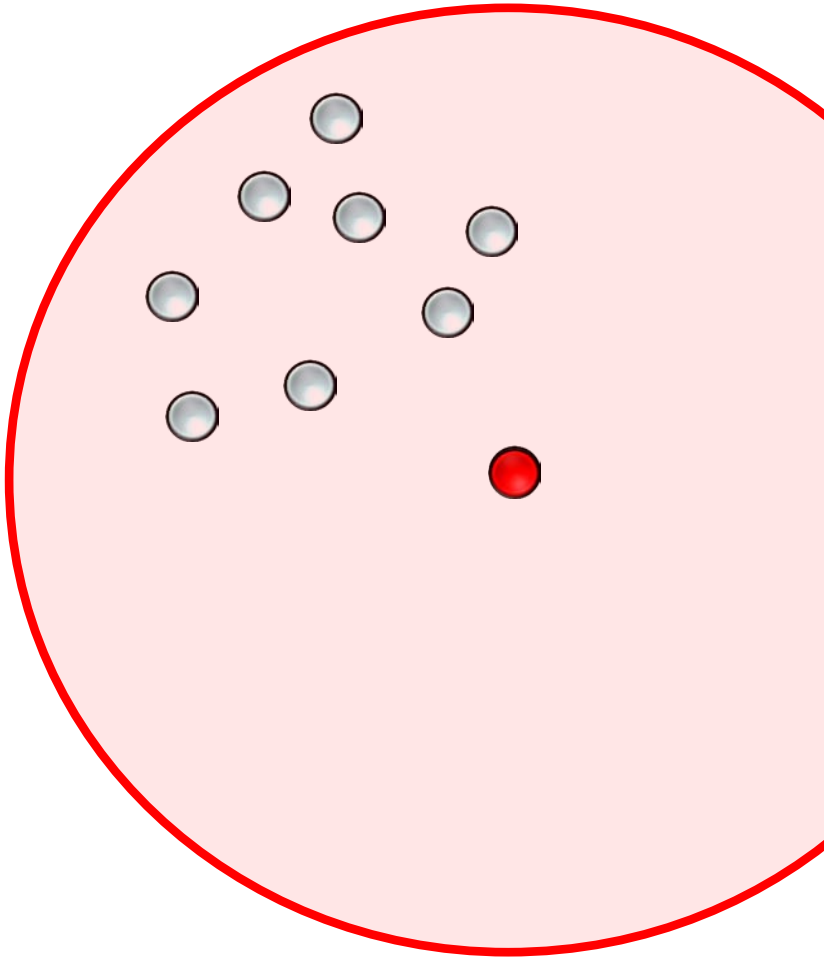
Problem:



I can:

send / receive

hear each node



I can:

send / receive

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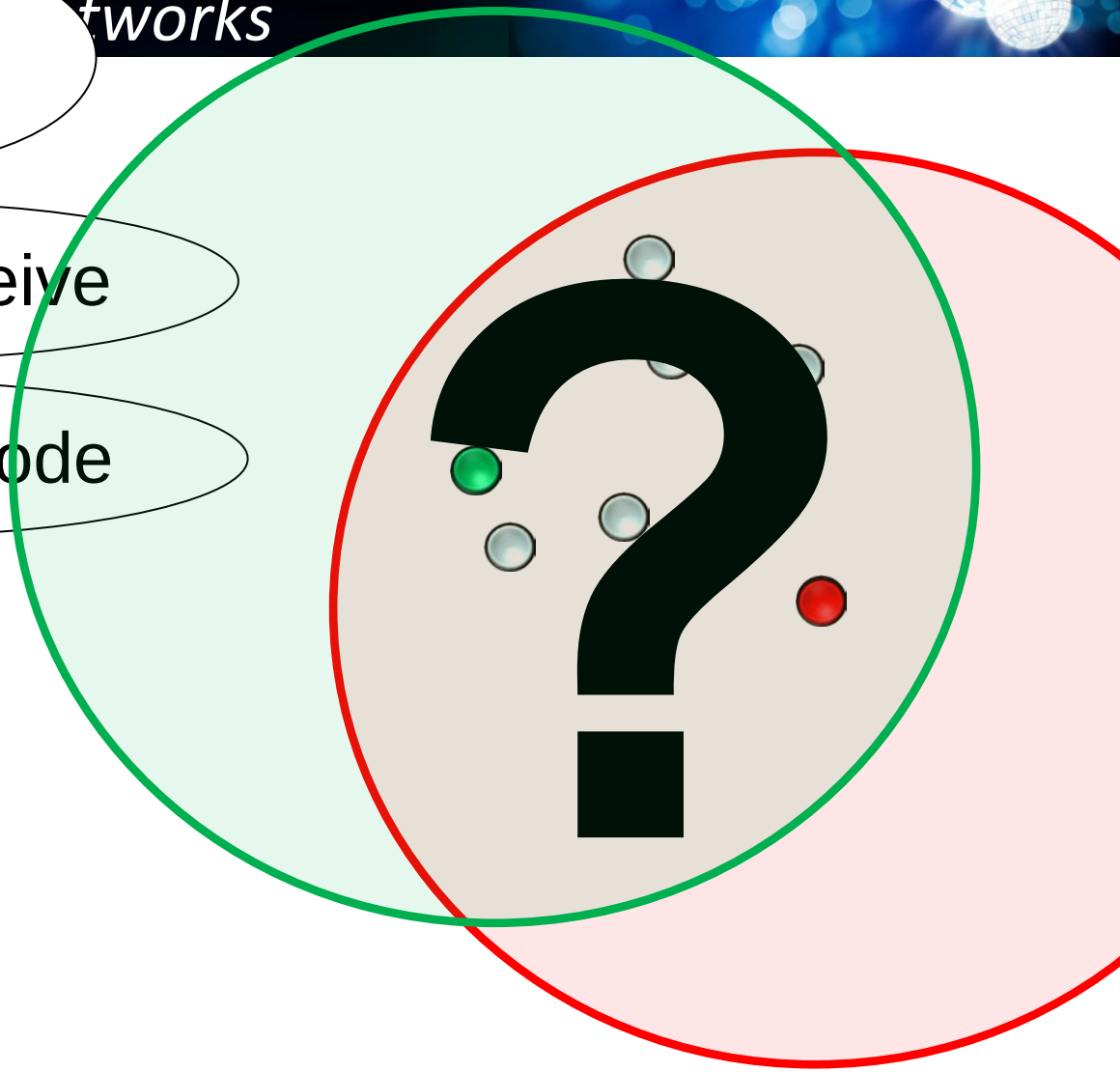
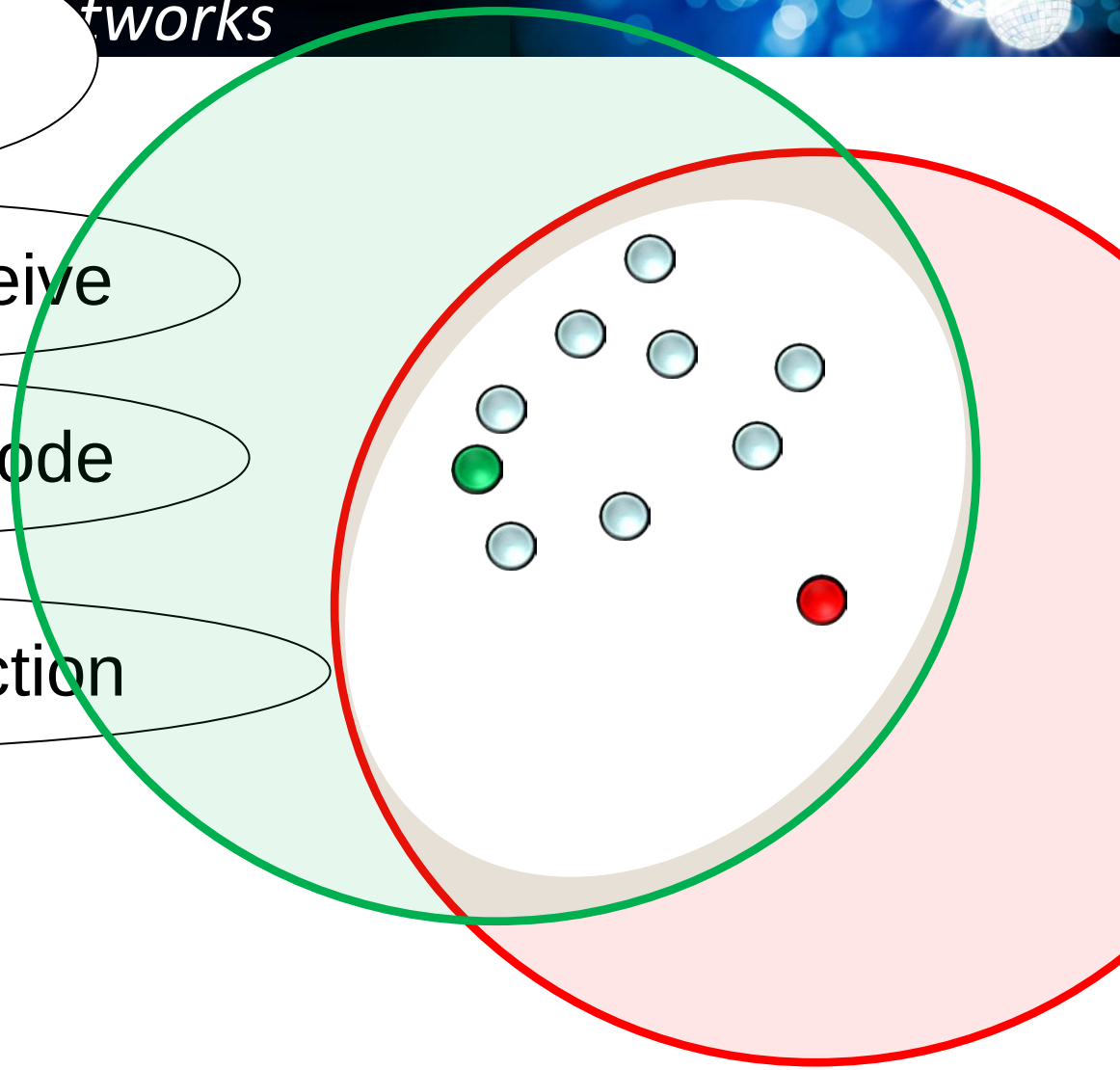


I can:

send / receive

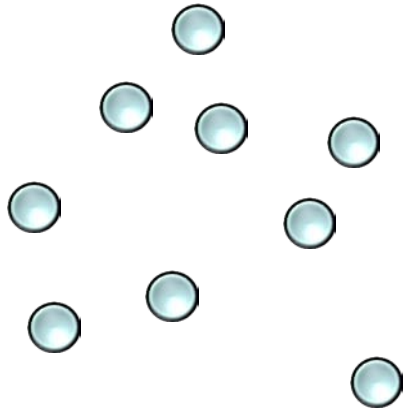
hear each node

no collsion detection

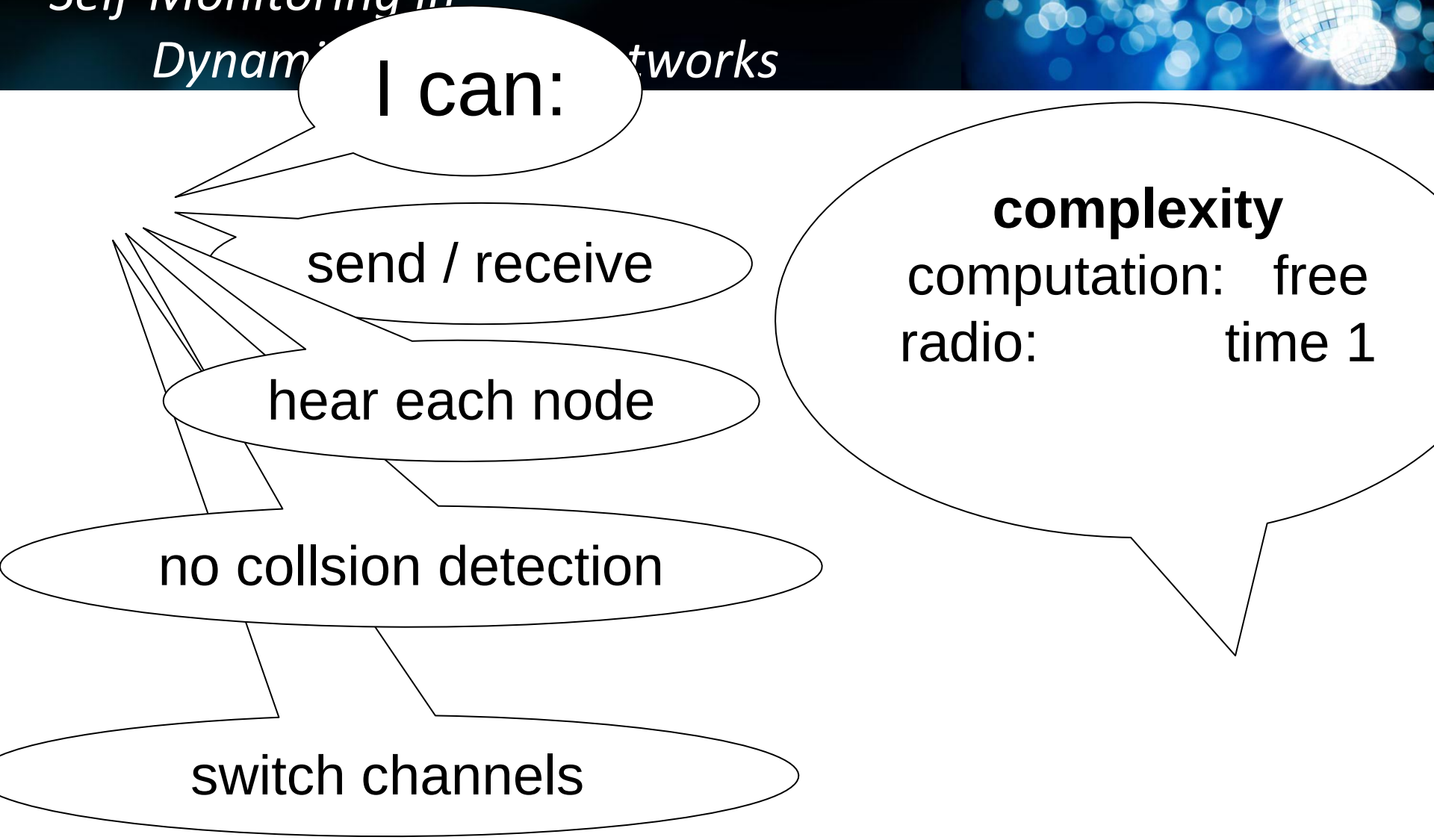


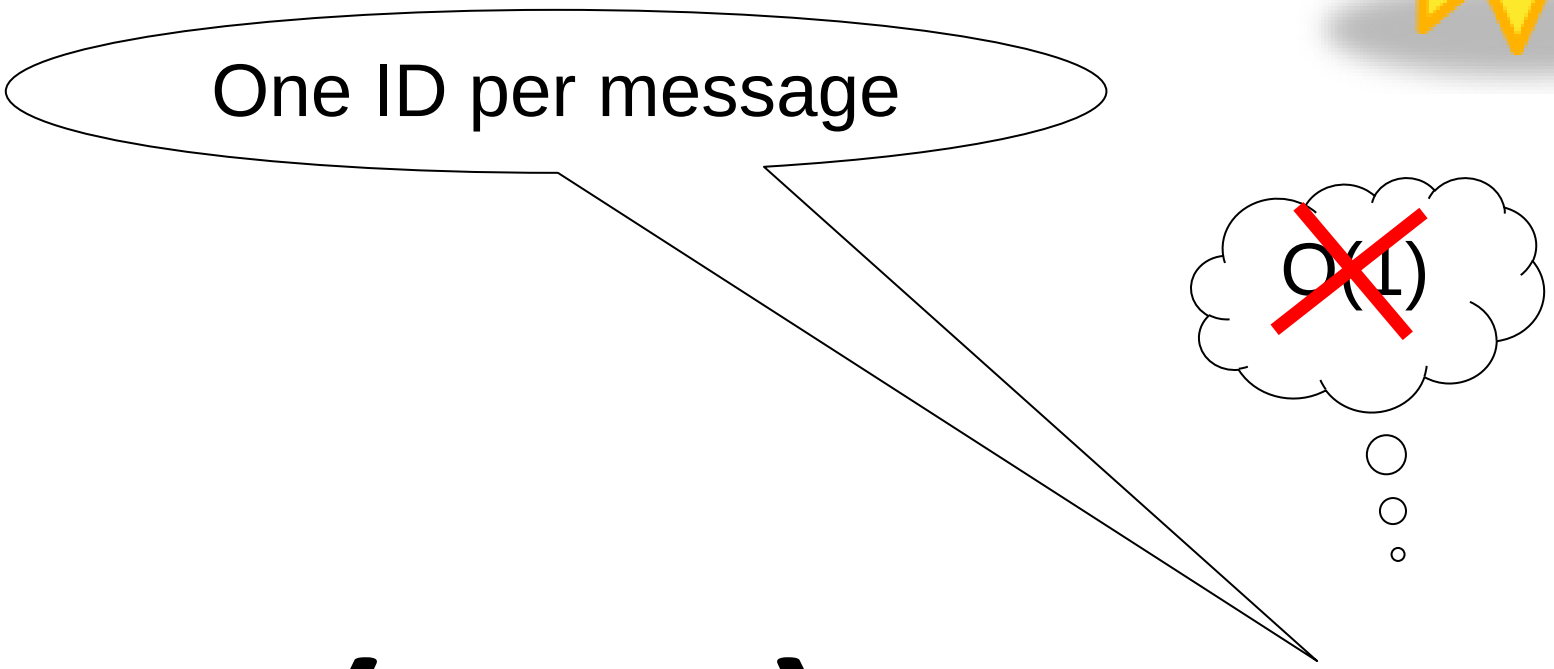
I can:

- send / receive
- hear each node
- no collsion detection
- switch channels



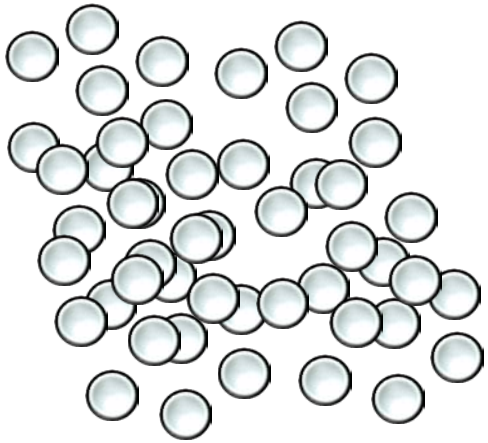
101 Mhz
117 Mhz
132 Mhz
…

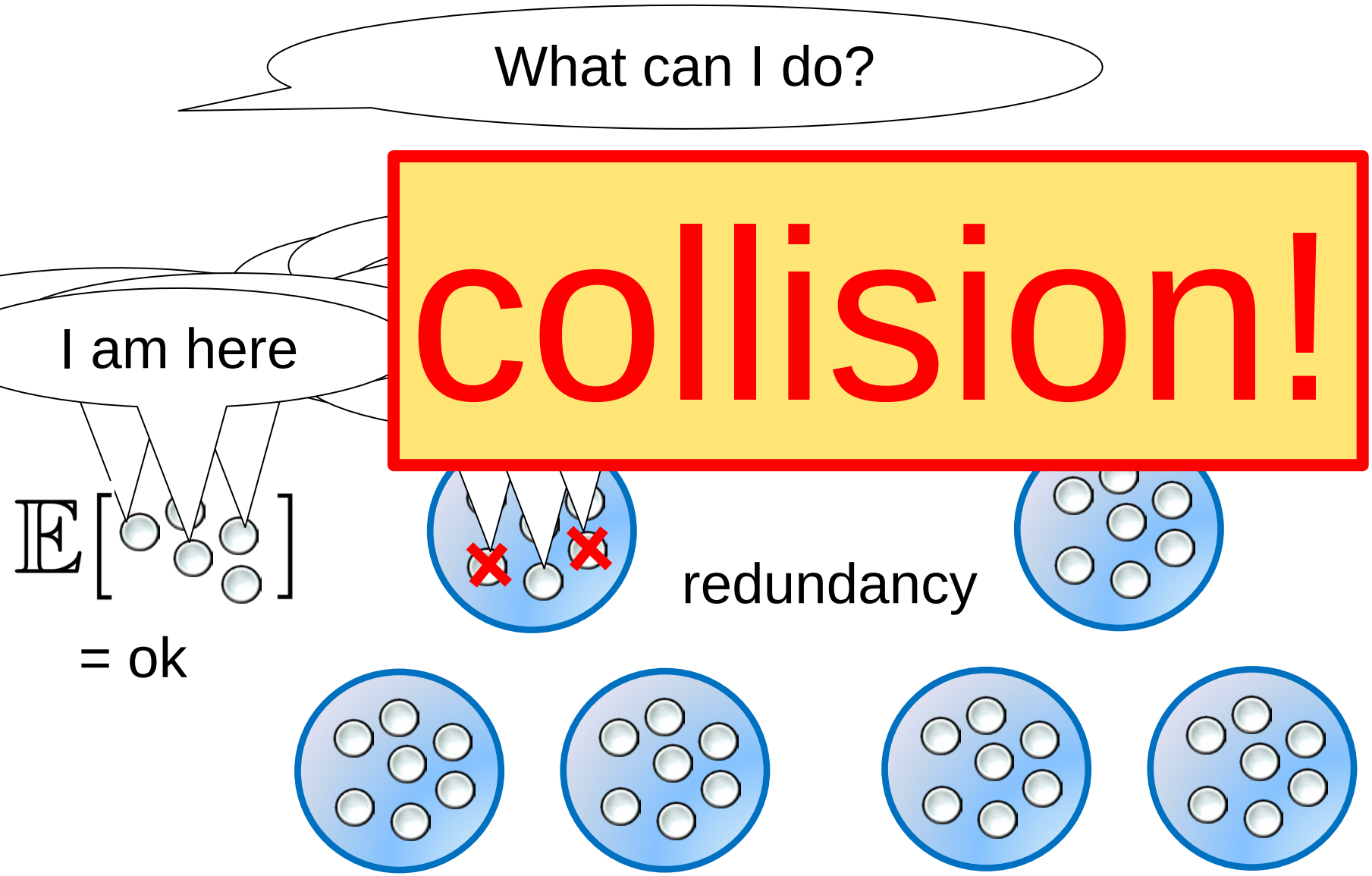

I can:
send / receive
hear each node
no collsion detection
switch channels
complexity
computation: free
radio: time 1



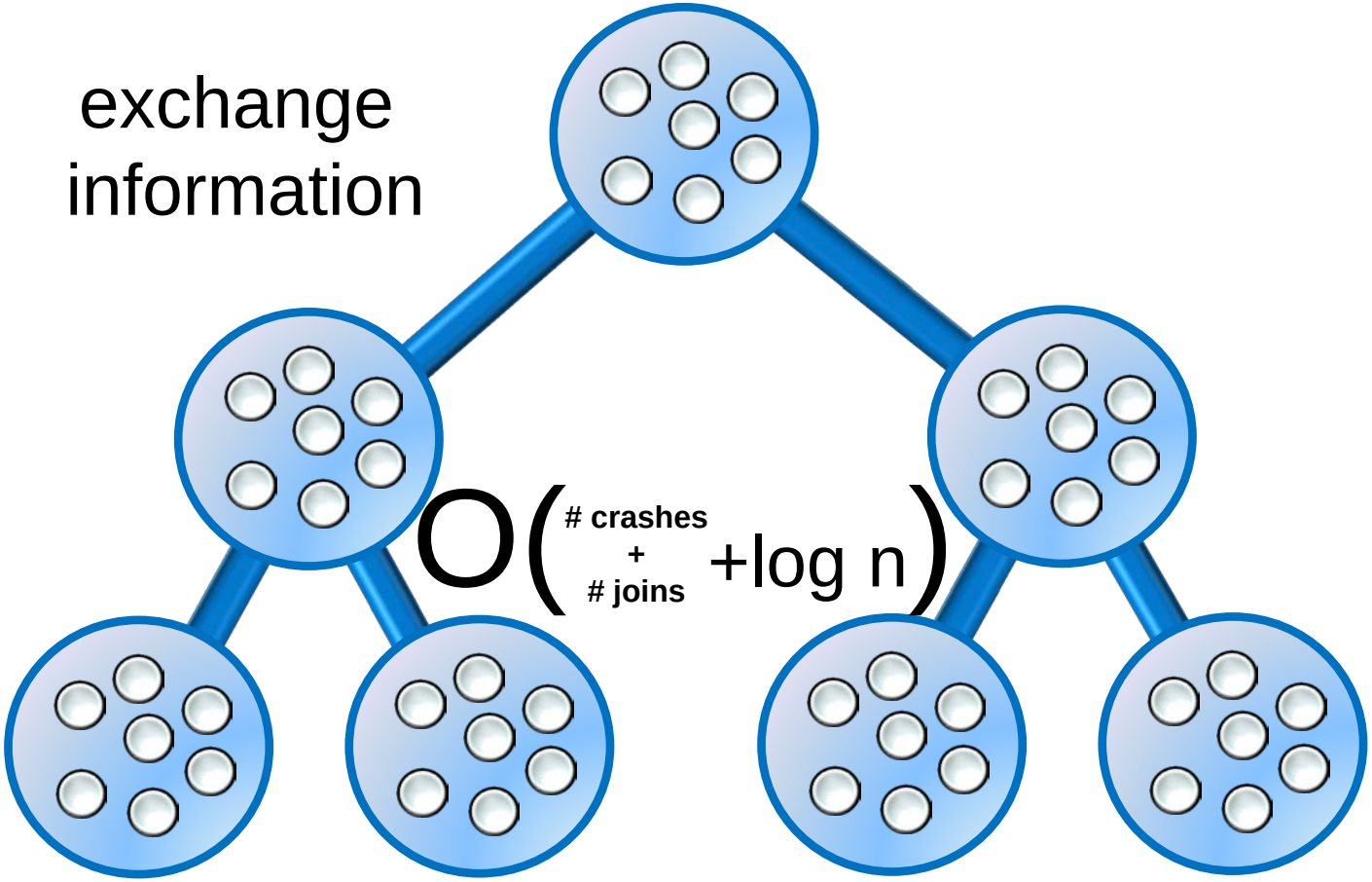
$$\Rightarrow \Omega\left(\begin{array}{c}\#\,\textbf{crashes}\\ +\\ \#\textbf{joins}\end{array}\right)$$

What can I do?




What can I do?
collision!
I am here
redundancy
= ok

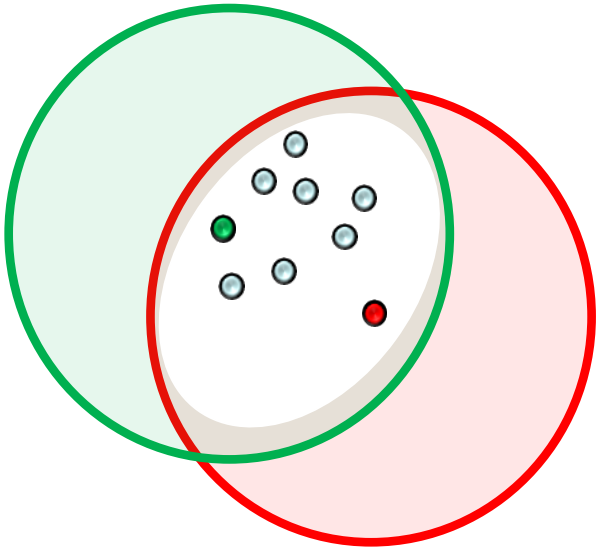
What can I do?

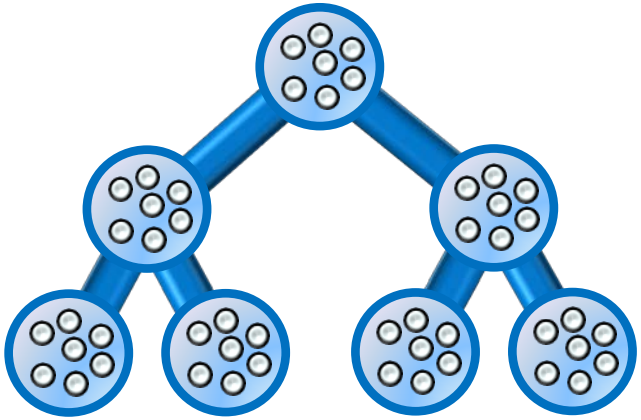


in Summary …

Update: who is in the network?

dynamics …





$\Omega(\#\text{ crashes} + \#\text{ joins})$ $O(\#\text{ crashes} + \#\text{ joins} + \log n)$

Optimal

Current w[illegible]k: $O(\#\text{ crashes} + \#\text{ joins})$ w.h.p.

Thank You!

Questions & Comments?

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