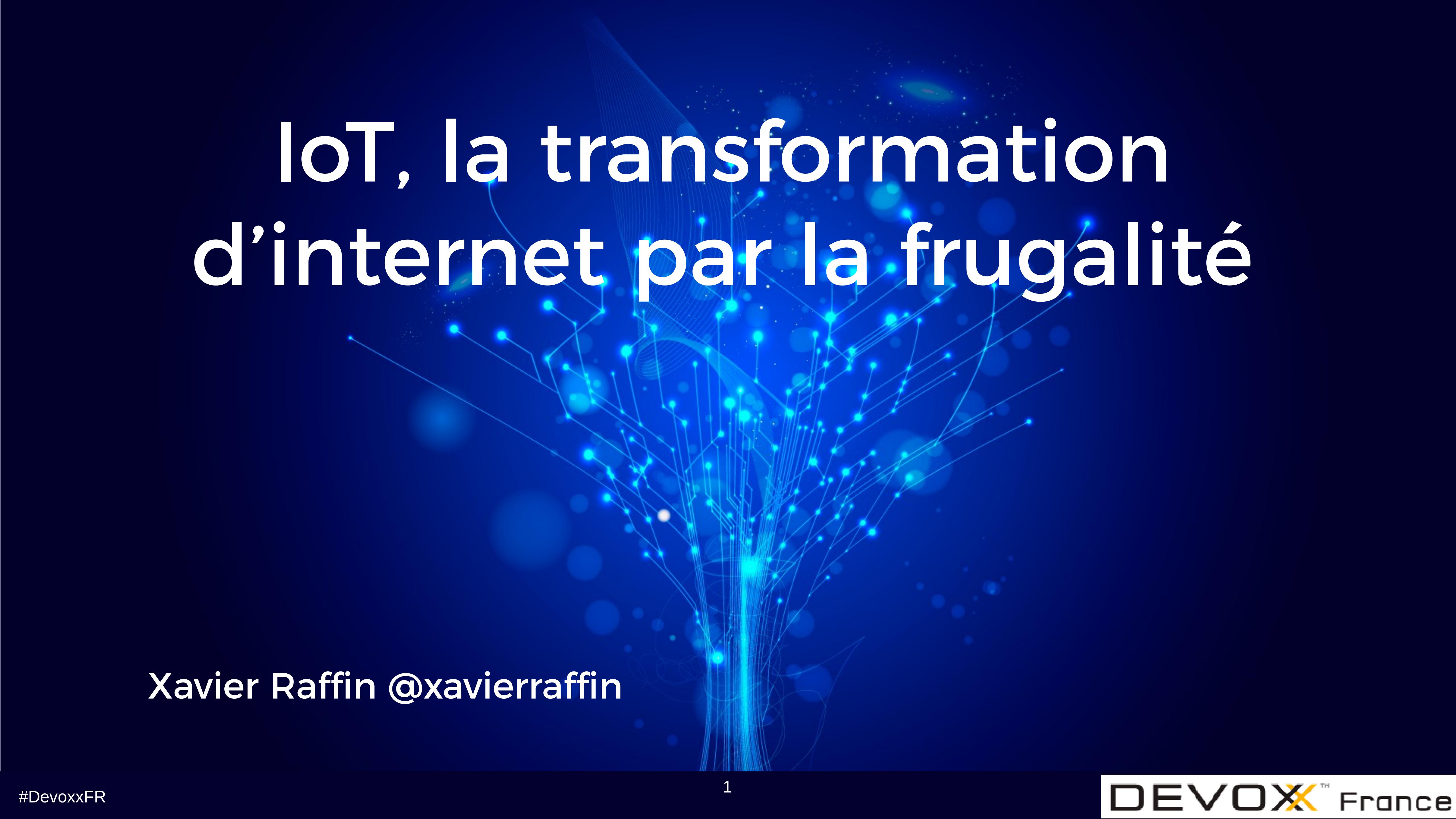
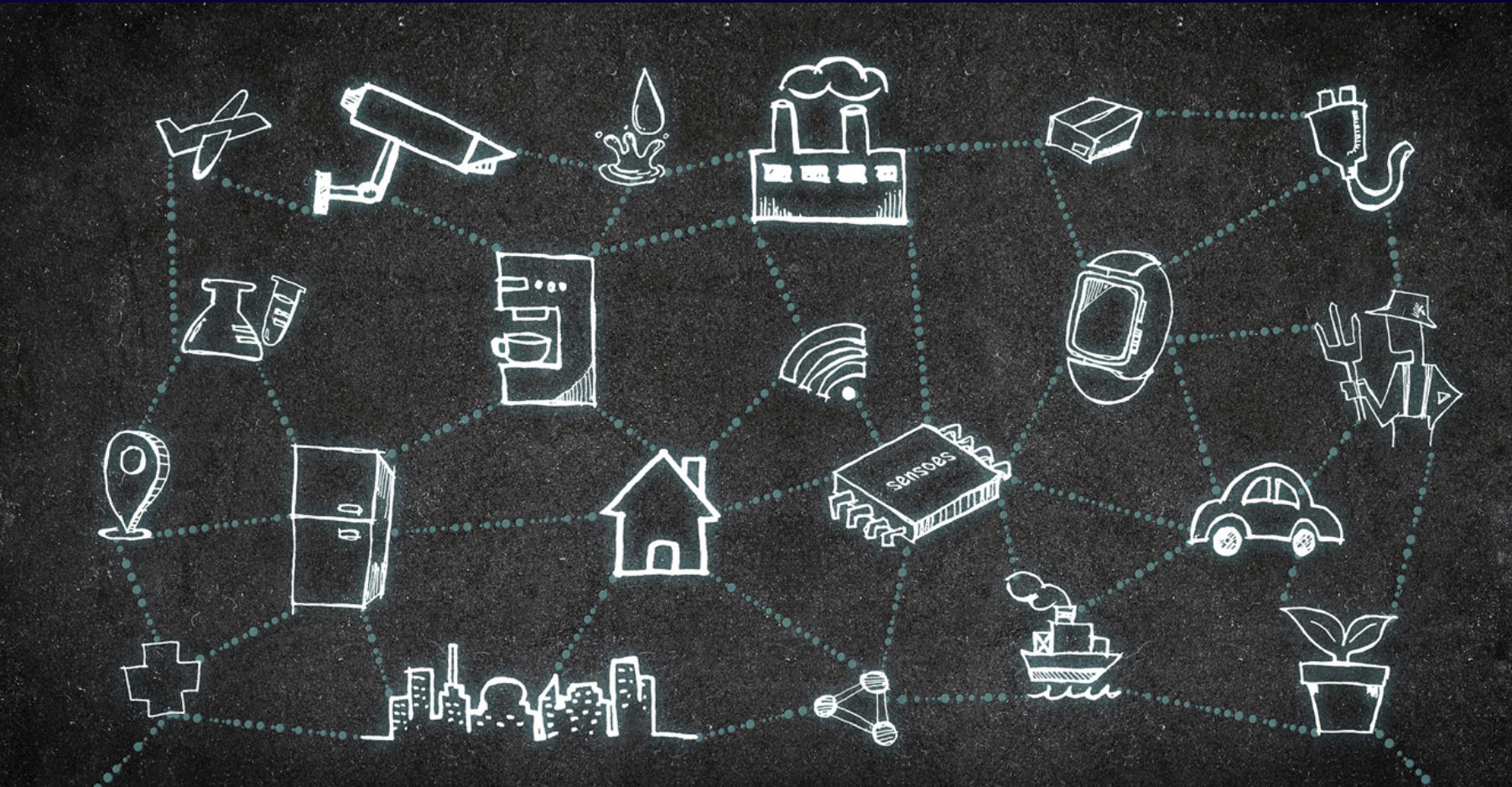
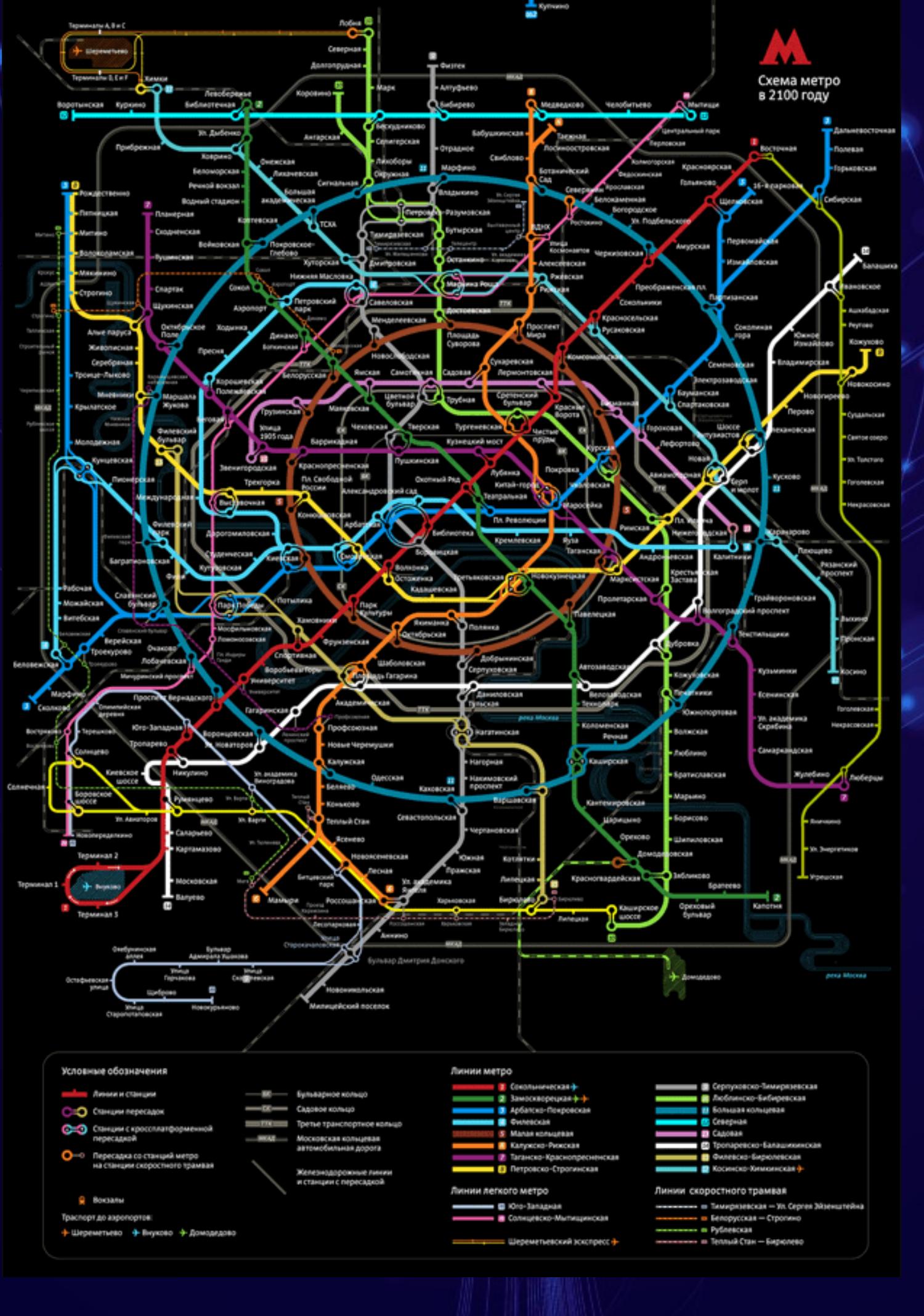


IoT, la transformation d'internet par la frugalité



Xavier Raffin @xavierraflin

A network expert ;-)



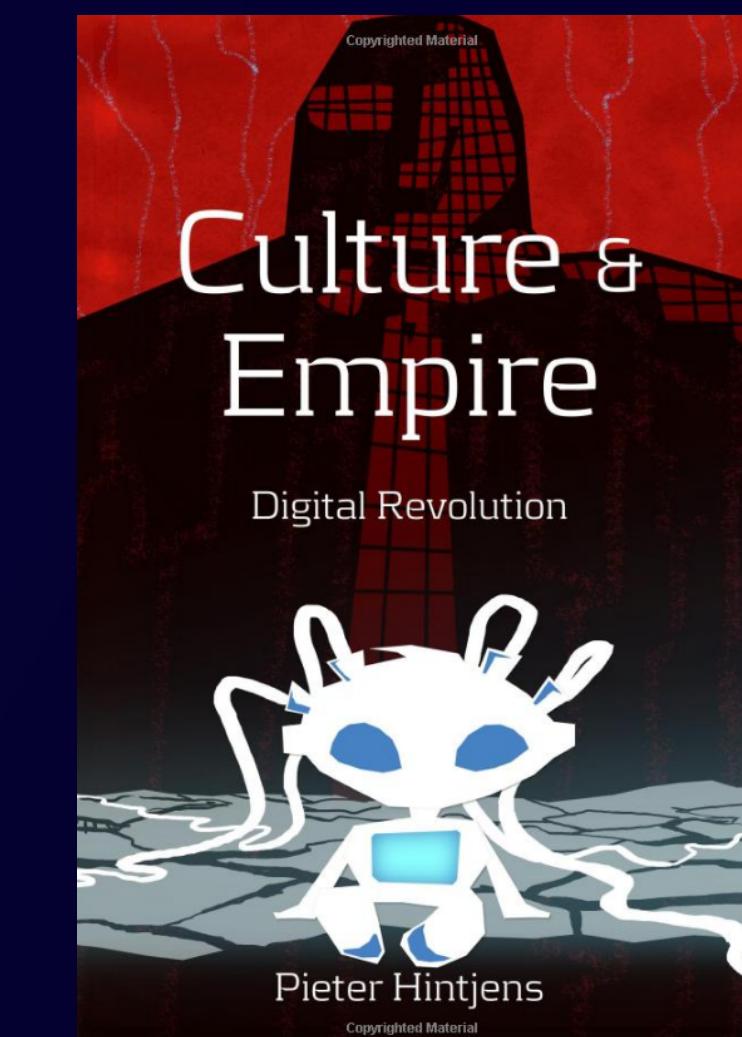
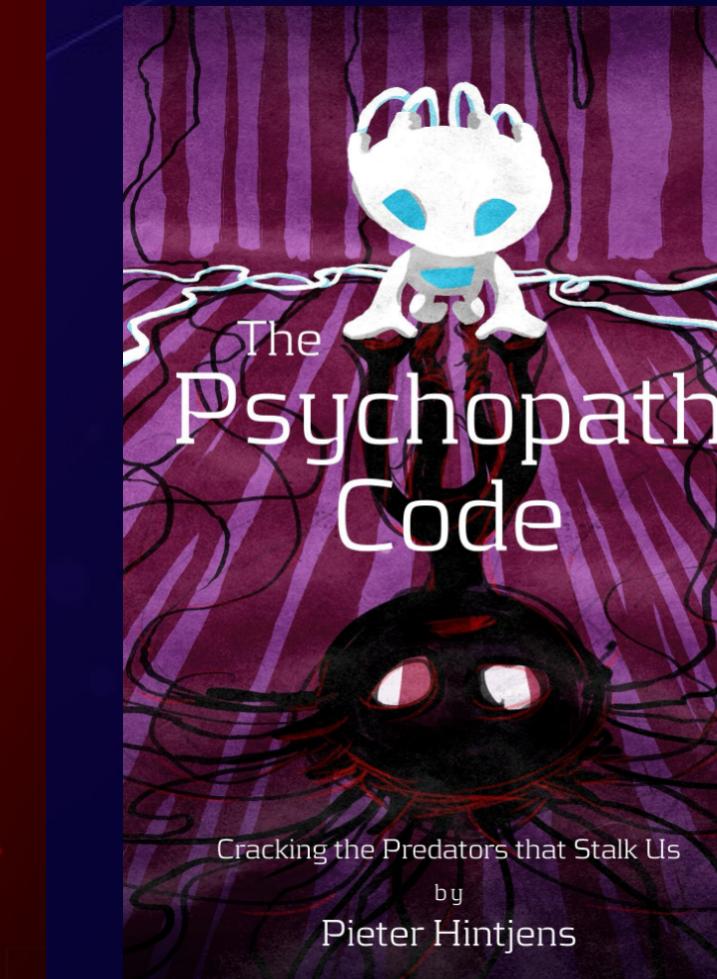
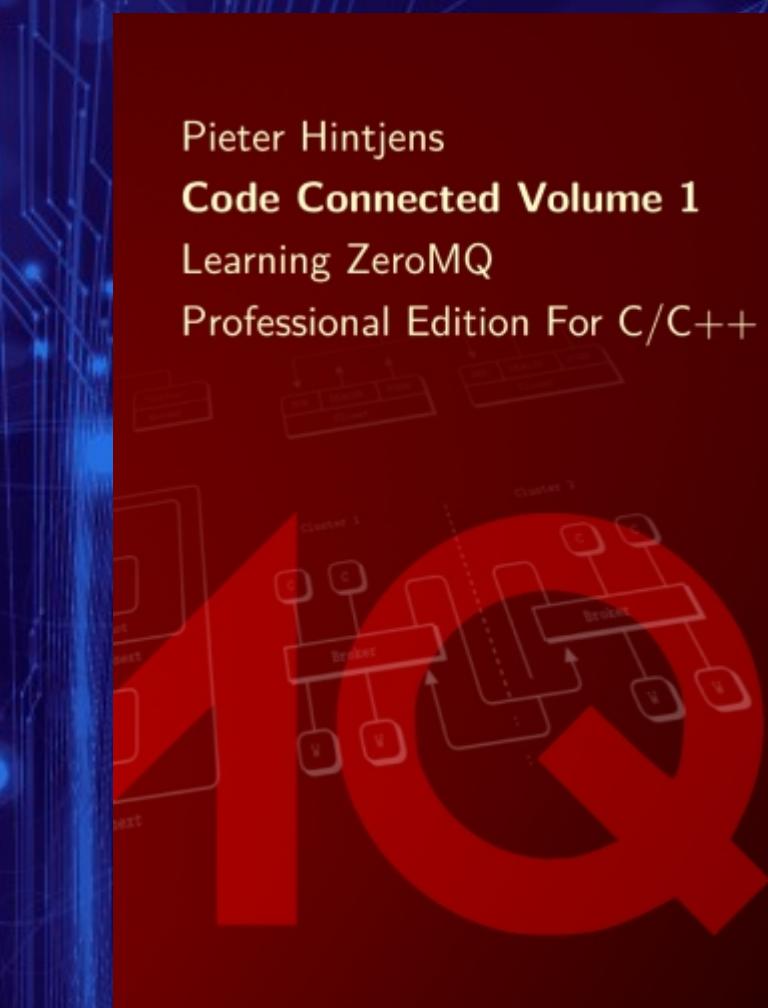
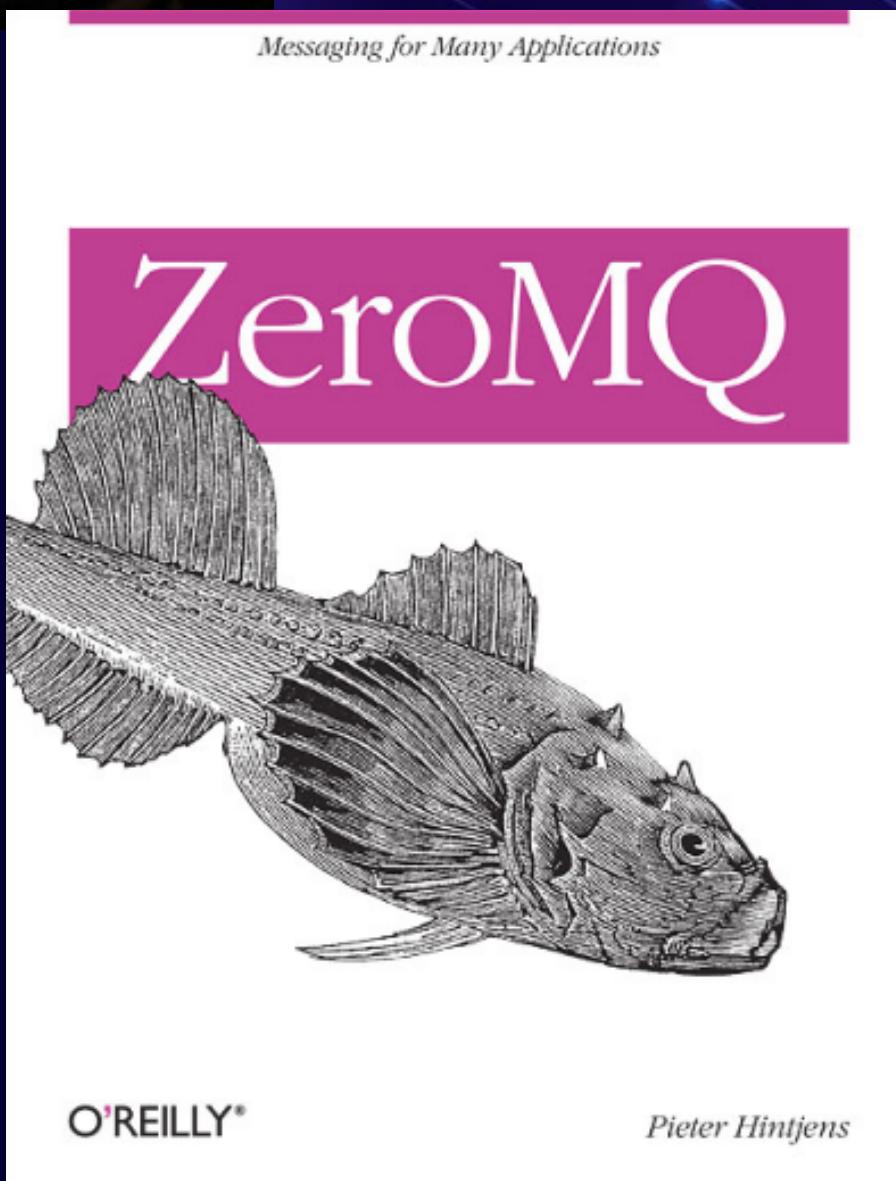
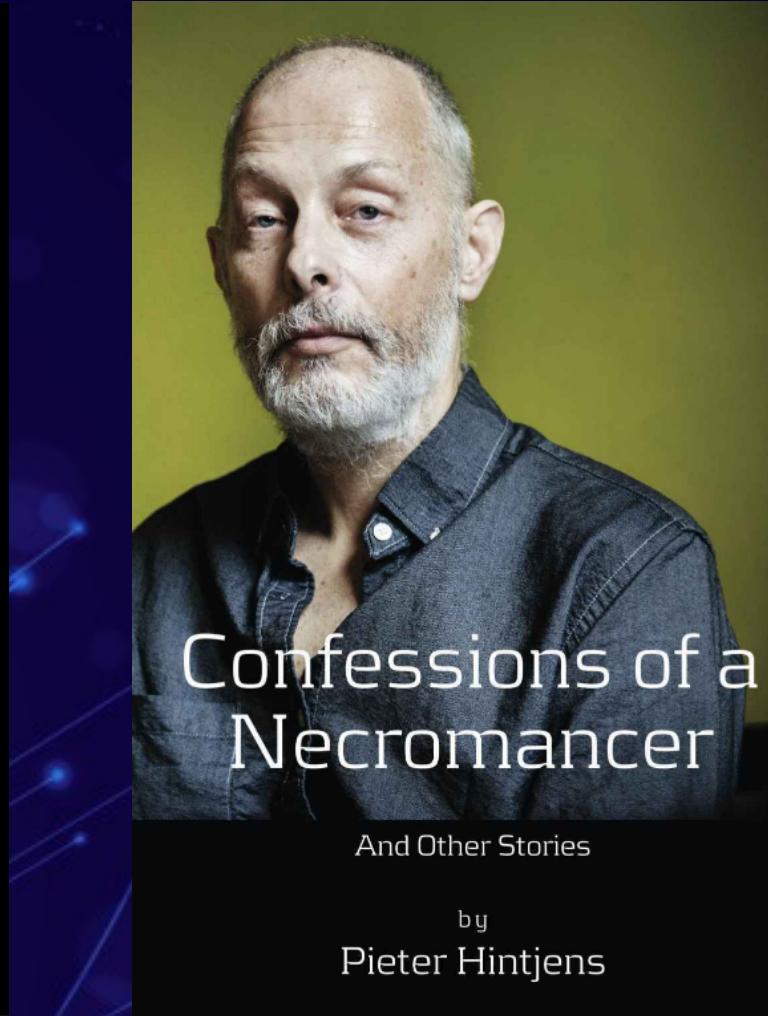
sigfox

I'm Open



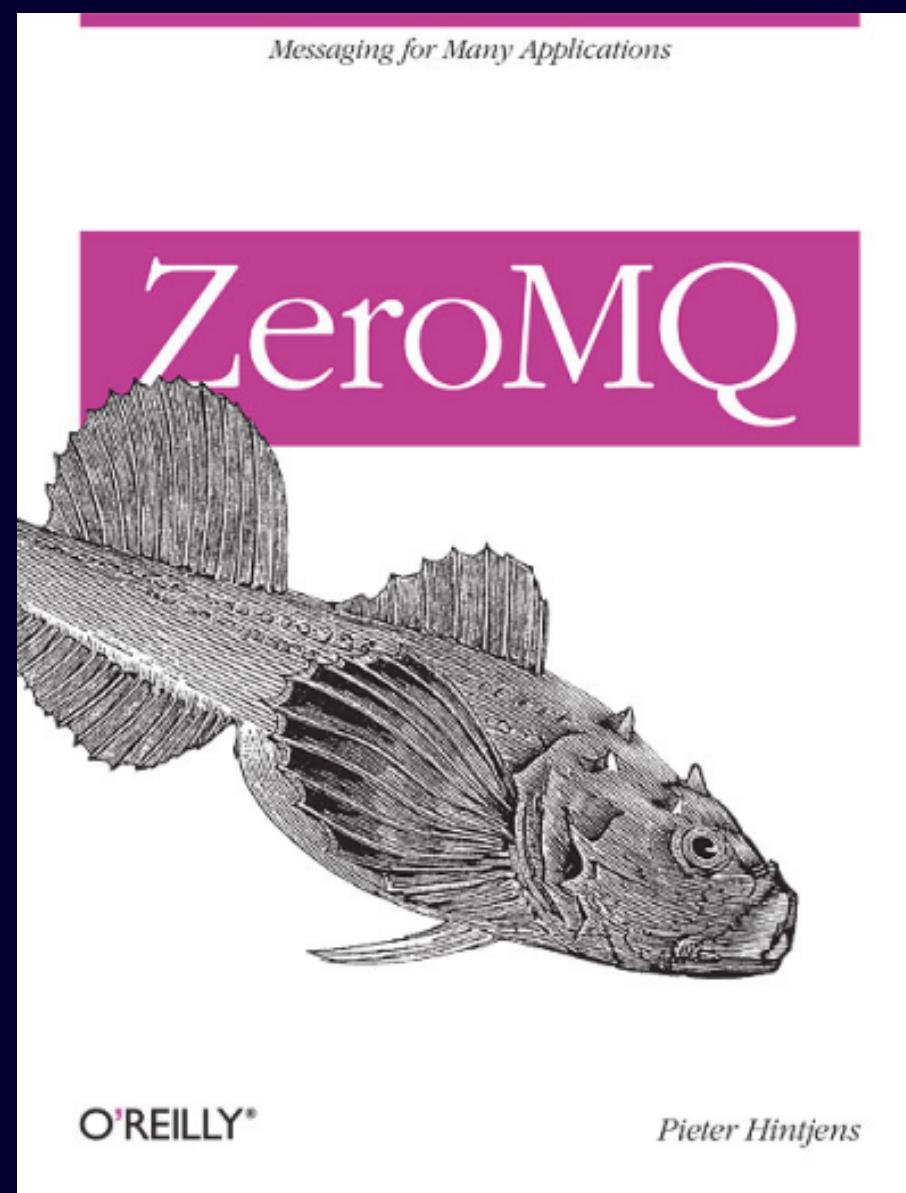
DATA.toulouse-métropole
Le portail des données ouvertes du territoire

Peter Hintjens 1962 - 2016



A Framework for distributed computing

“Some people use the phrase the ‘Internet of Things’ ”



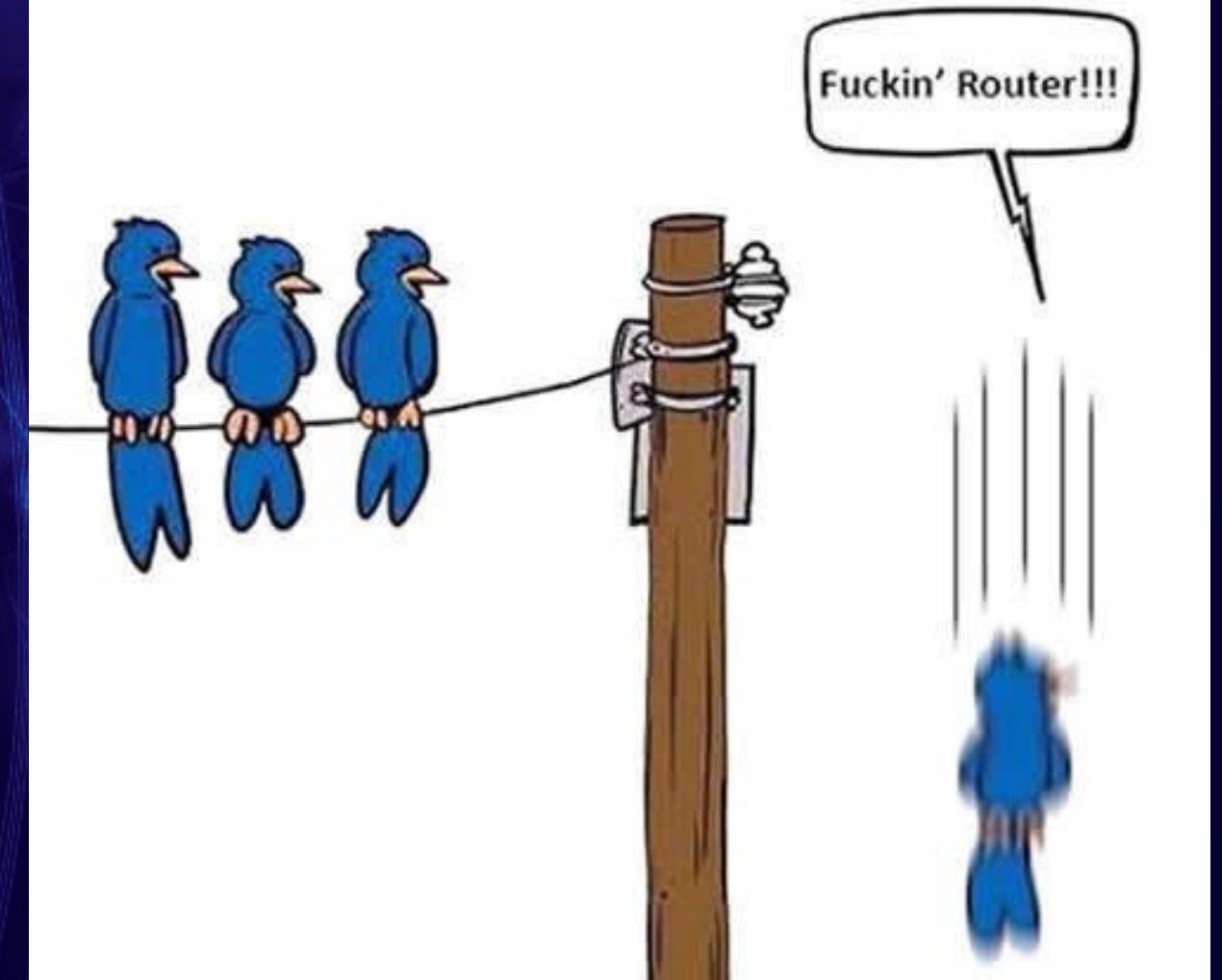
“Think of clouds of tiny smart and perhaps self-replicating machines surrounding every person, filling every space”

“These clouds of tiny machines talk to each other, all the time, over short-range wireless links using the Internet Protocol. They create mesh networks, pass information and tasks around like nervous signals.”

Secret Life of Wifi : *Why Mesh Isn't Here Yet ?*

"The future is clearly wireless"

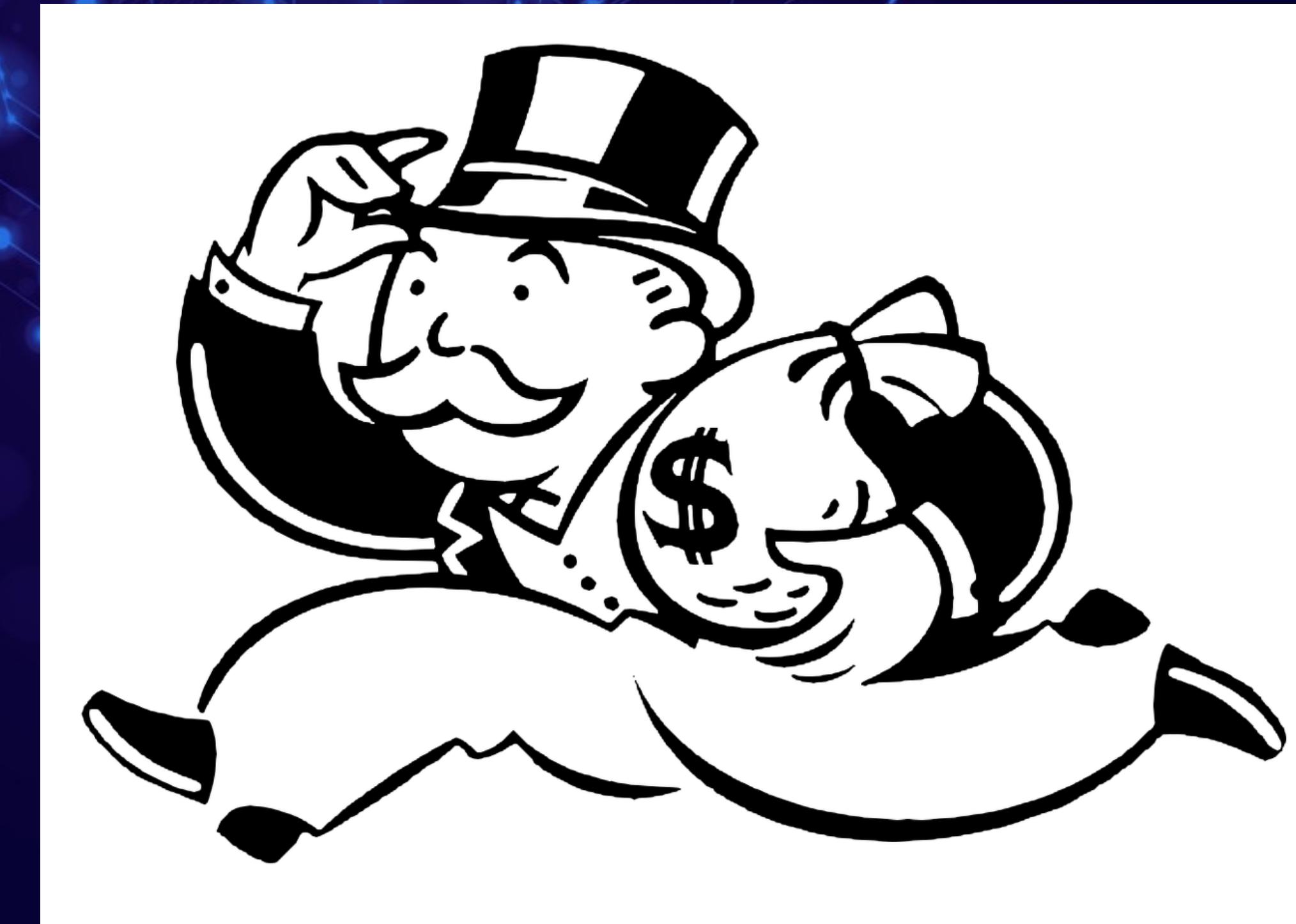
"IEEE 802.11s : Devices talk to each other directly"



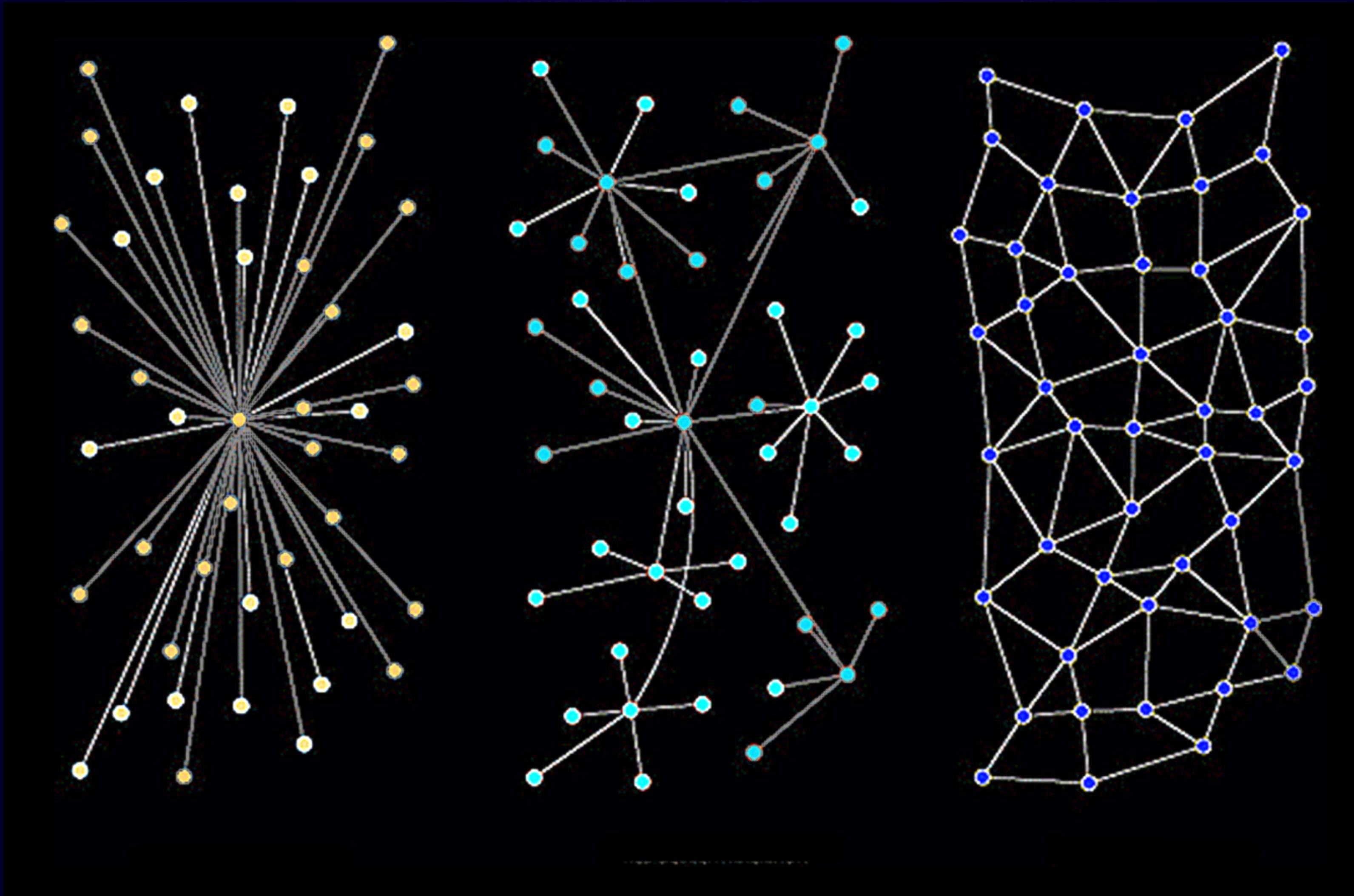
Secret Life of Wifi : *Why Mesh Isn't Here Yet ?*

"The future is clearly wireless, and while many big businesses live by concentrating data in their clouds, the future doesn't look quite so centralized."

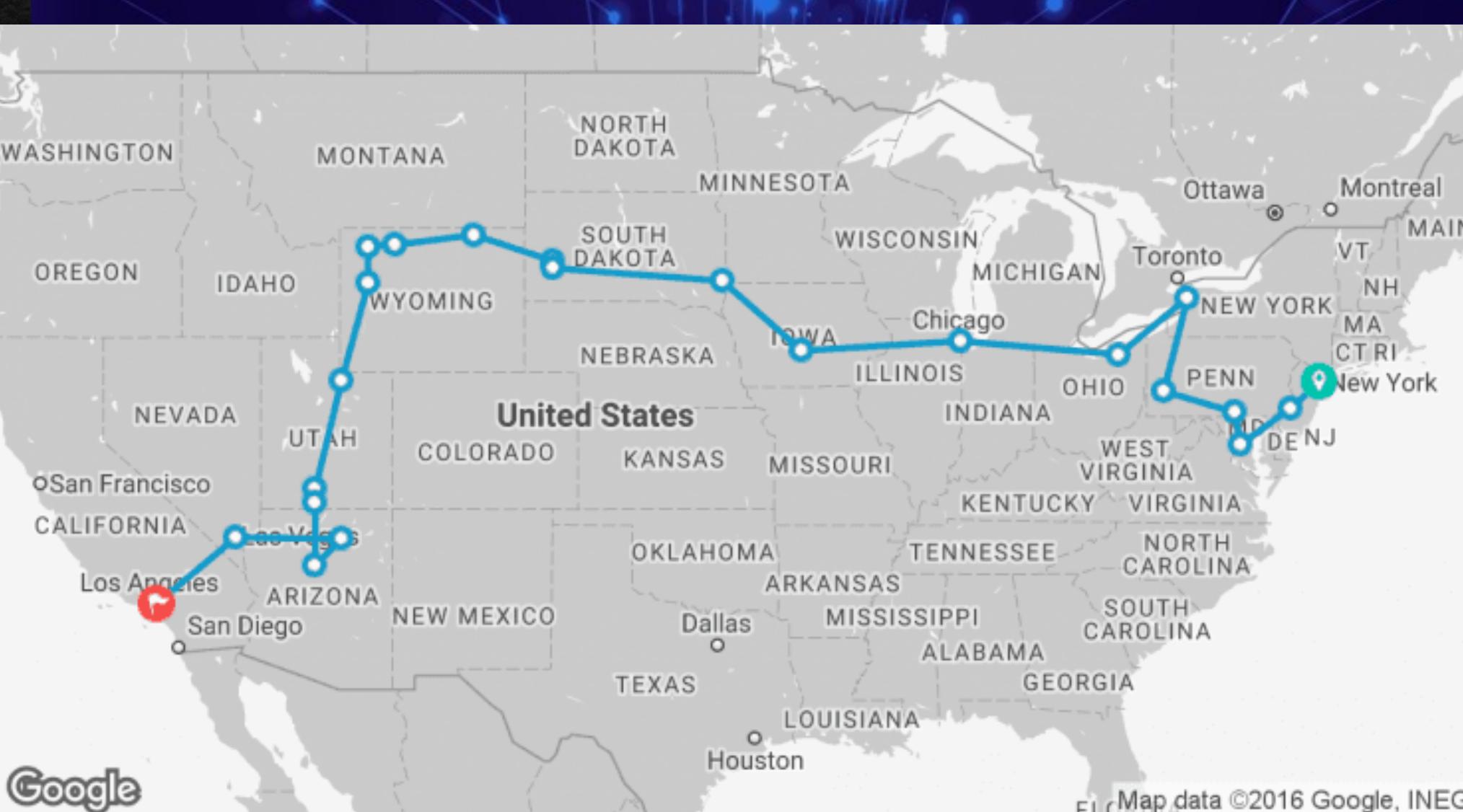
"Trust us, we're the experts"



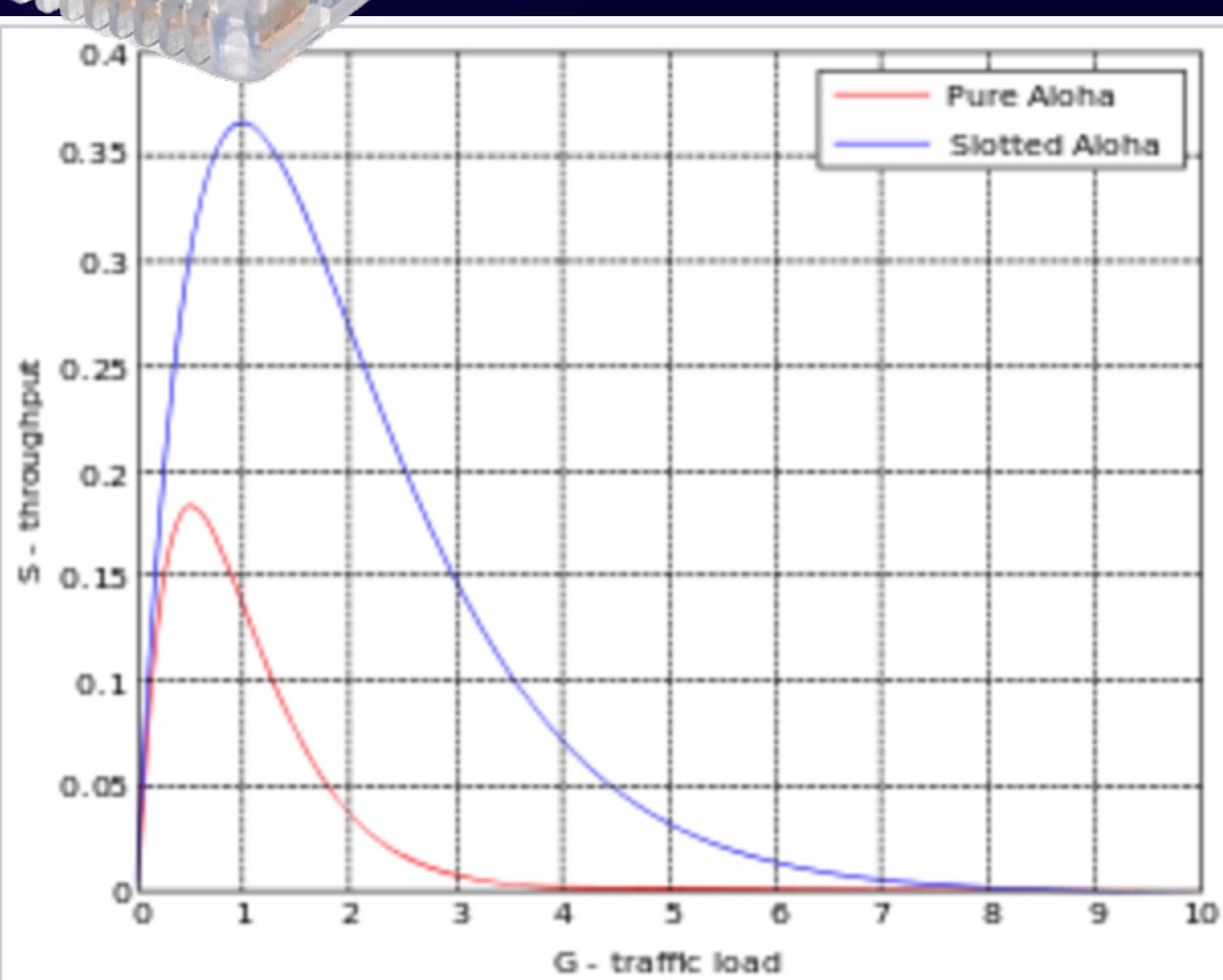
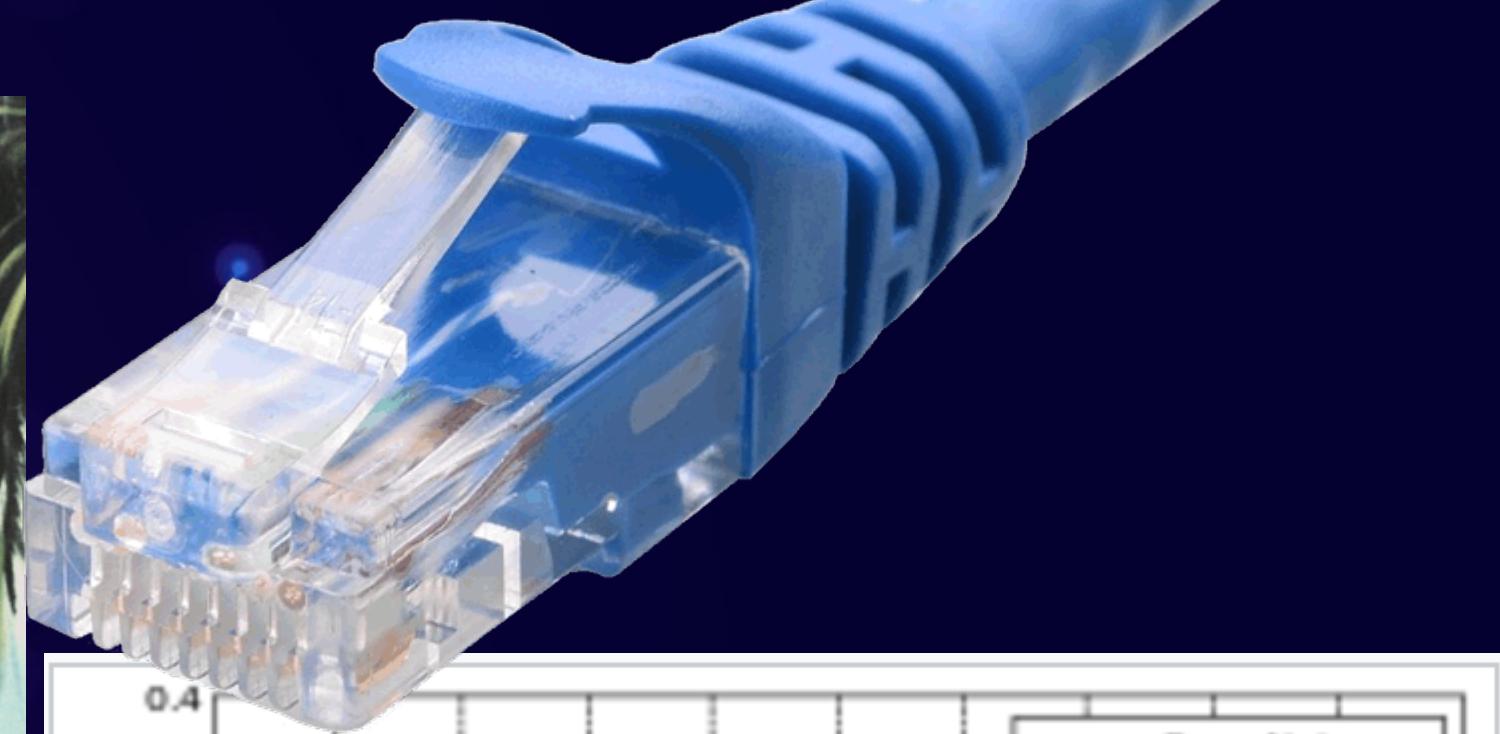
Topology



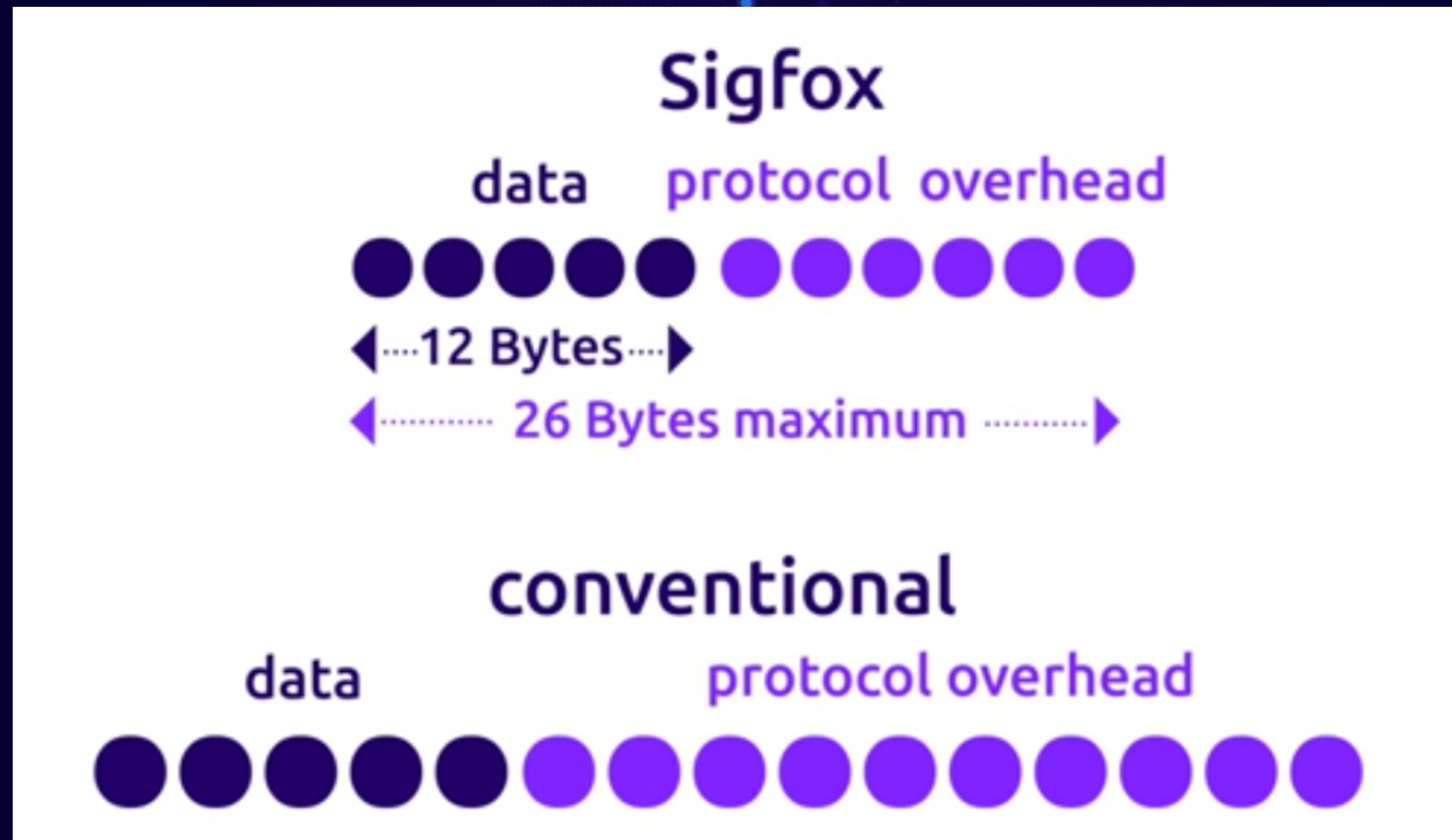
Topology & OSI model



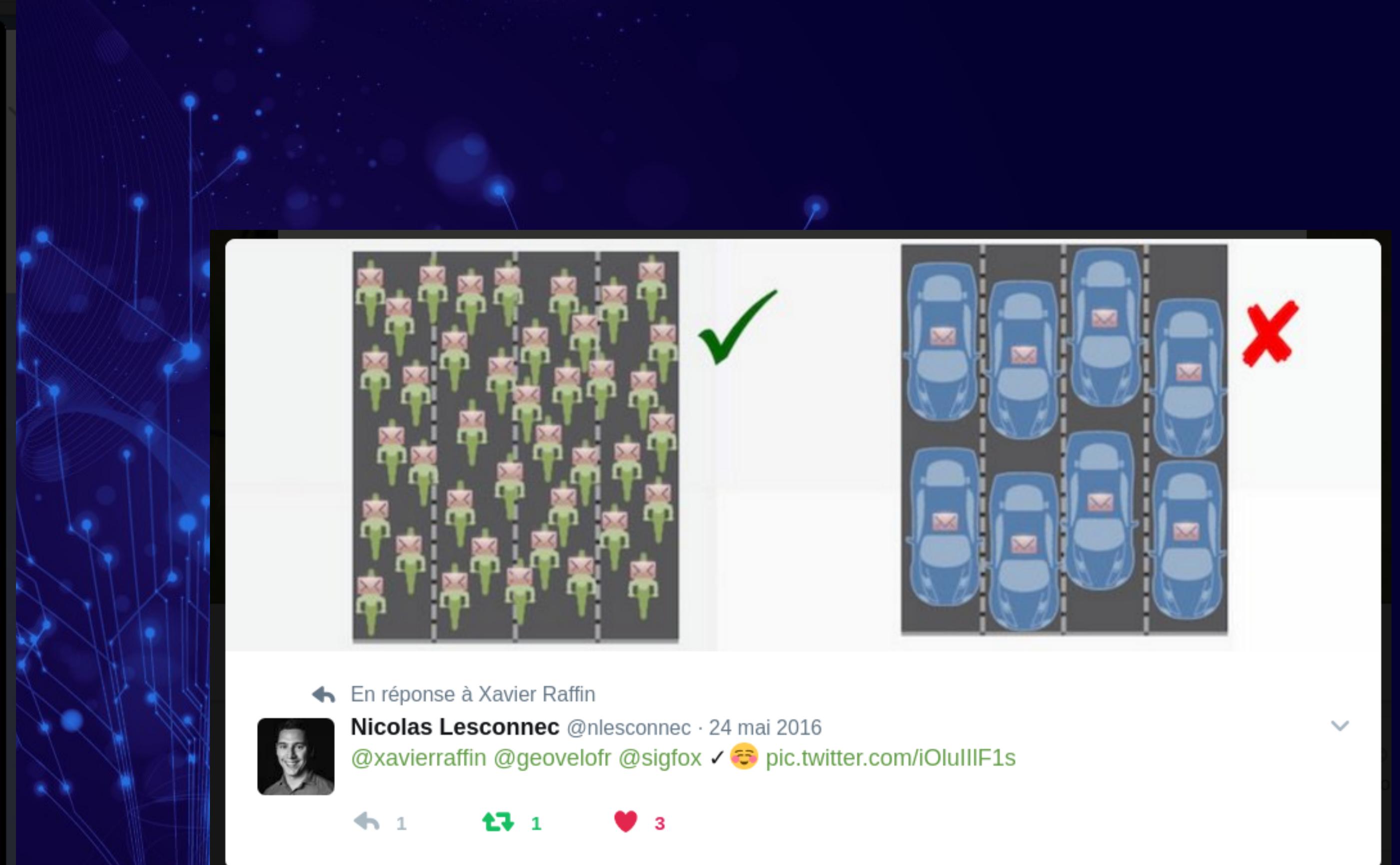
Peer 2 peer & entropy



How to be low ?



Spectrum saturation



How to be very low ?

Sigfox

data protocol overhead



◀...12 Bytes...▶

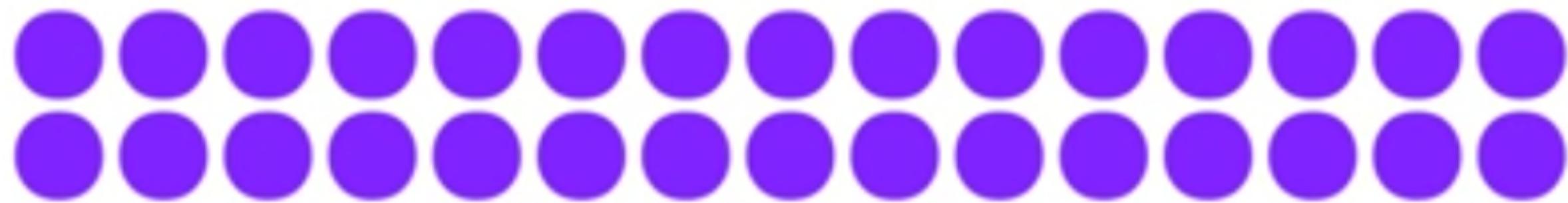
◀..... 26 Bytes maximum▶

conventional

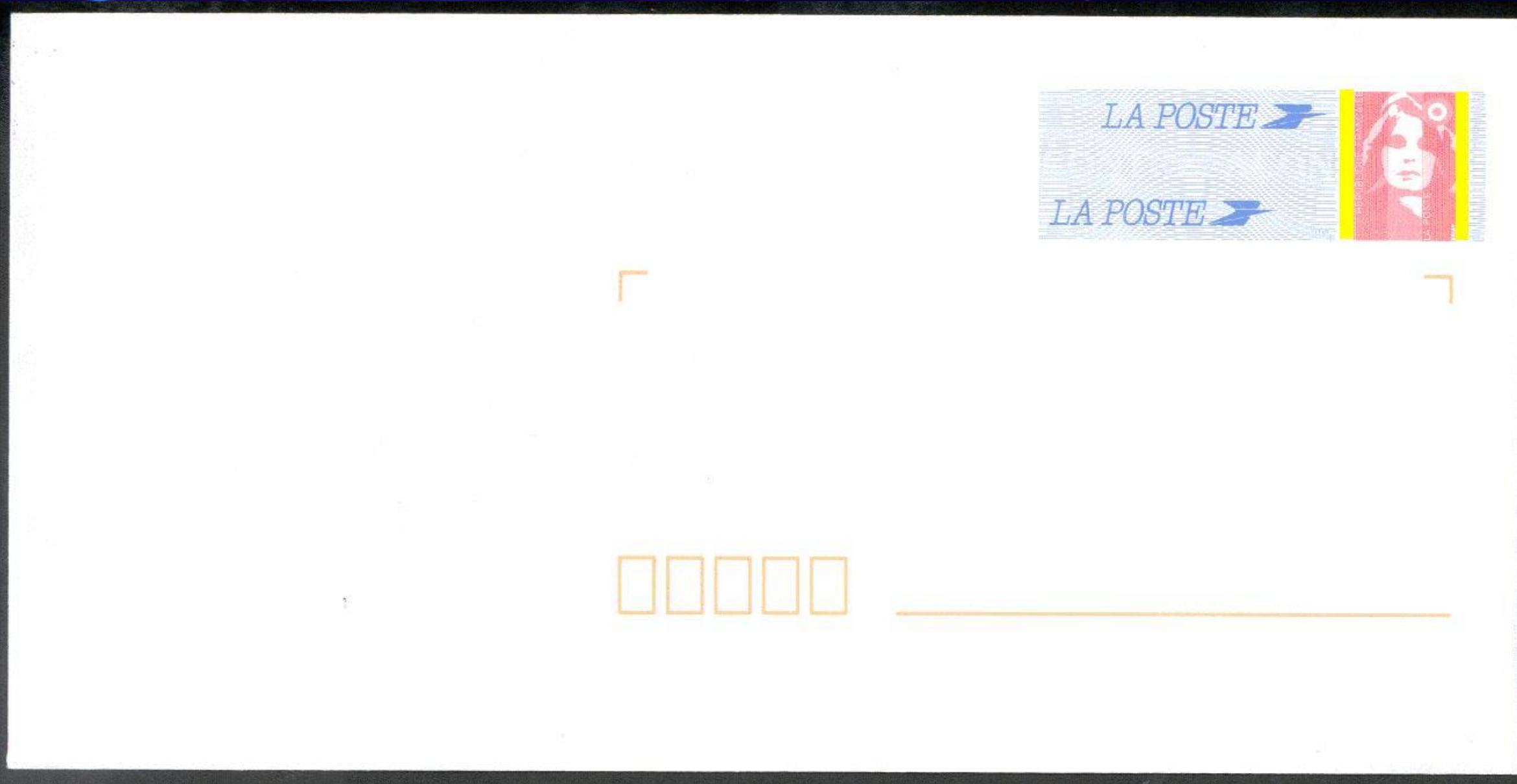
data



signaling



How to be very very low ?



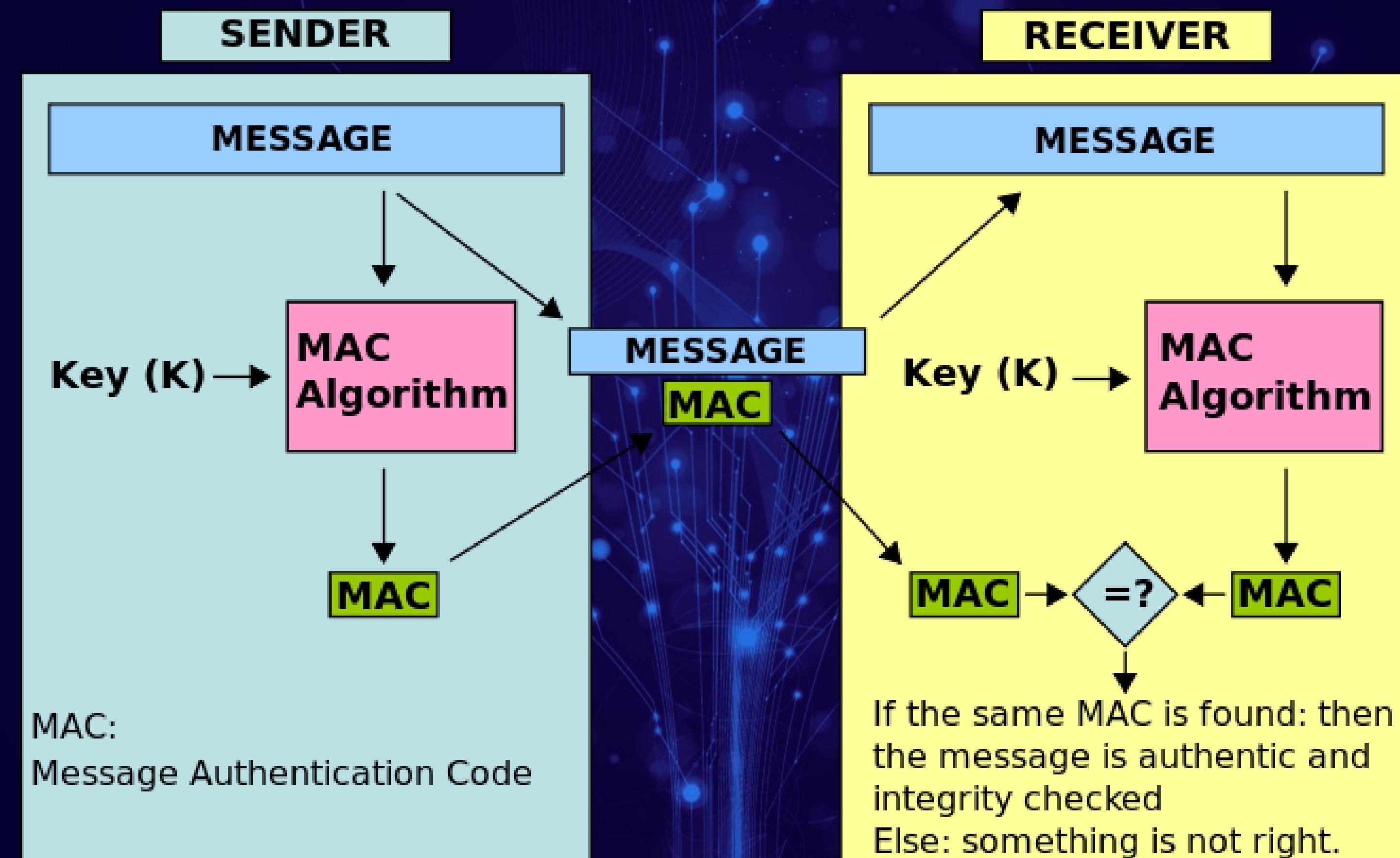
A “centralized” architecture



Mobile Security



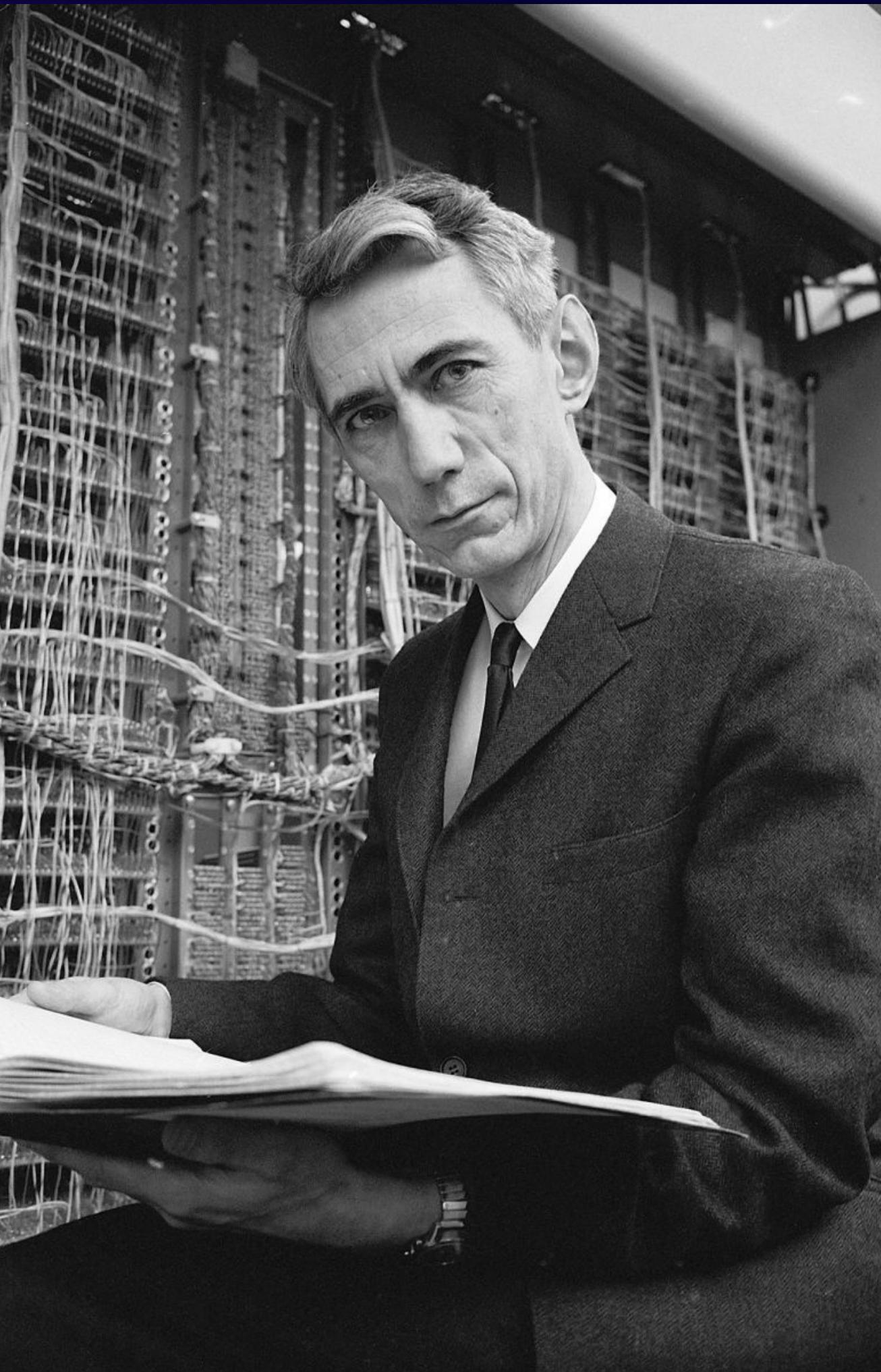
Shared Secret



Content diversification

*How to encrypt a
single bit ?*

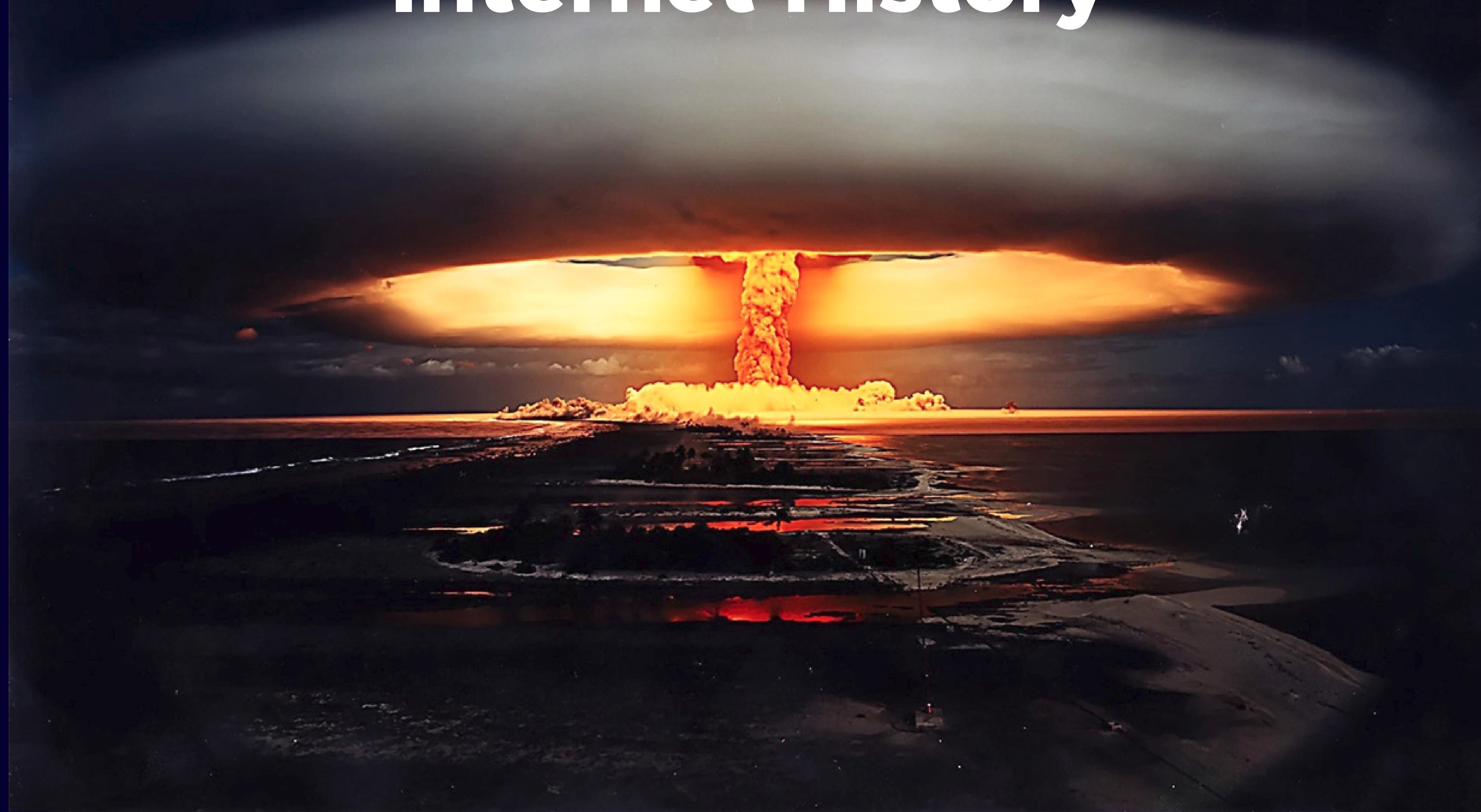
*0 or 1
That is the
question ?*



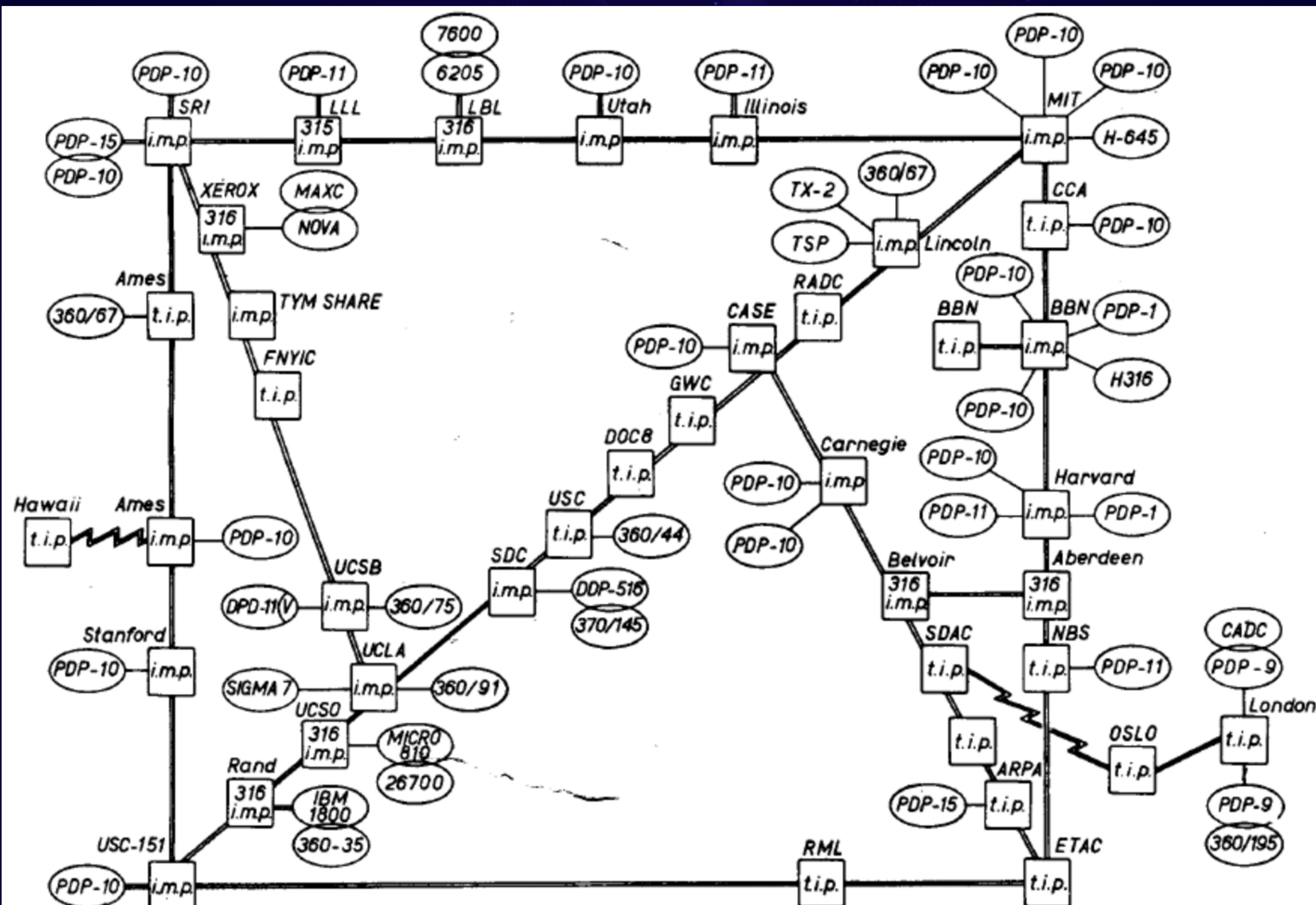
Internet History



Internet History



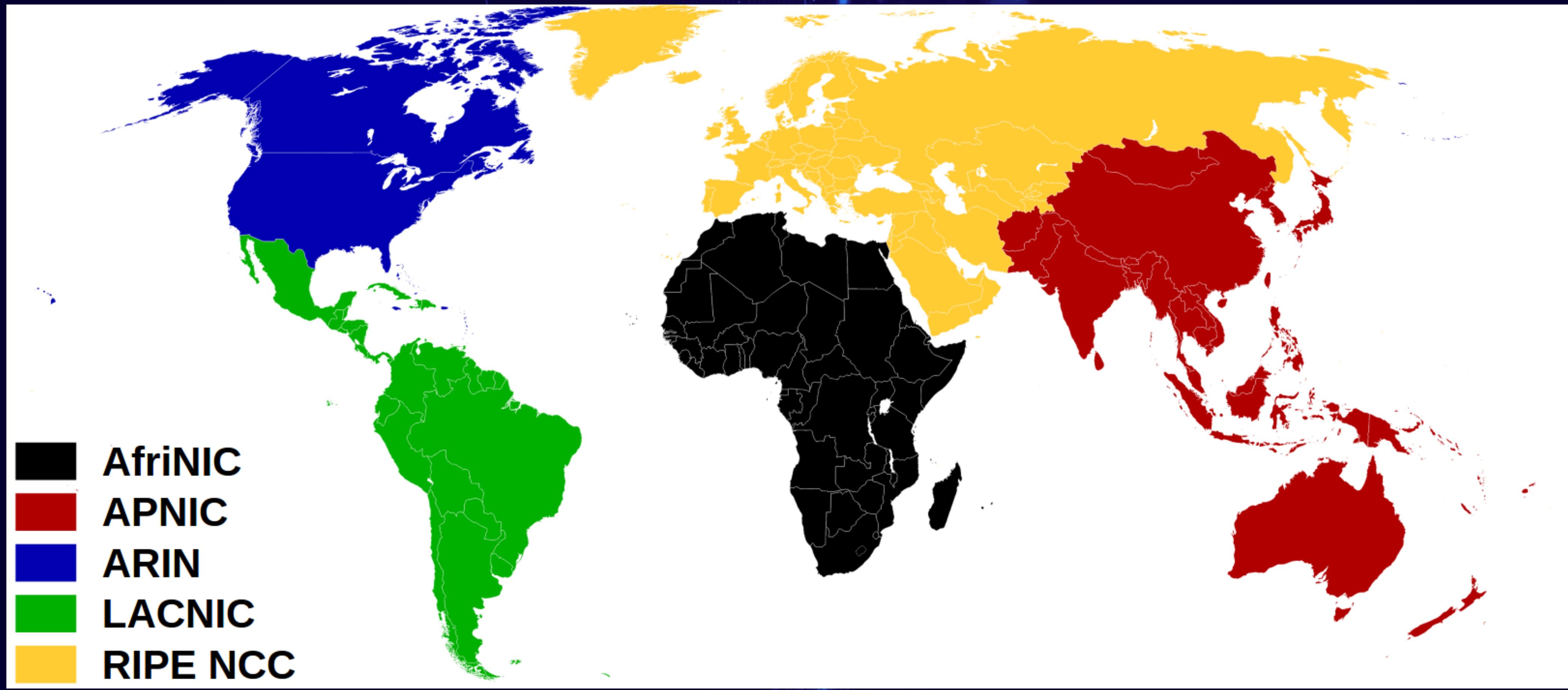
Decentralized History



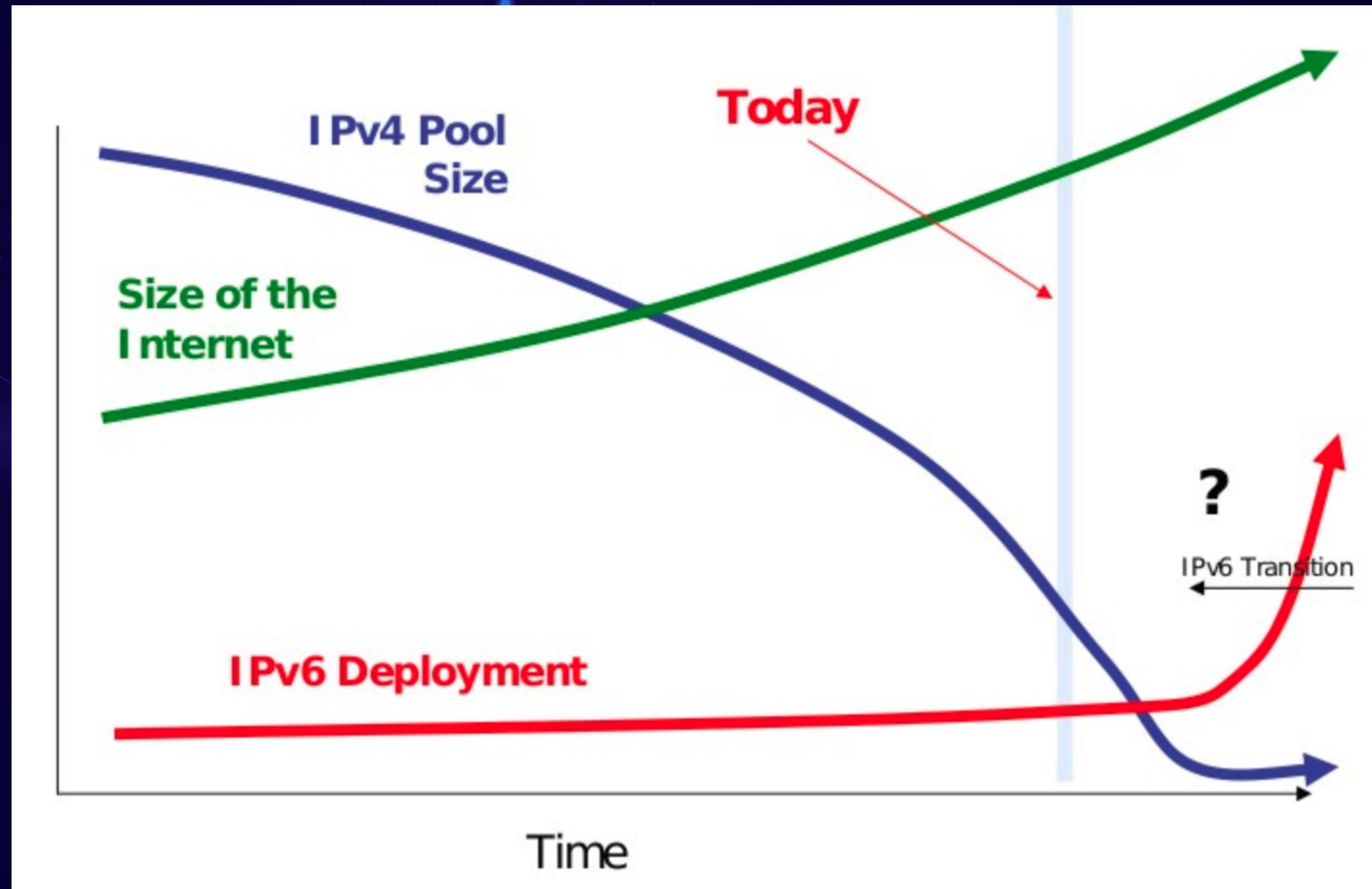
Decentralized History



Quite Centralized History

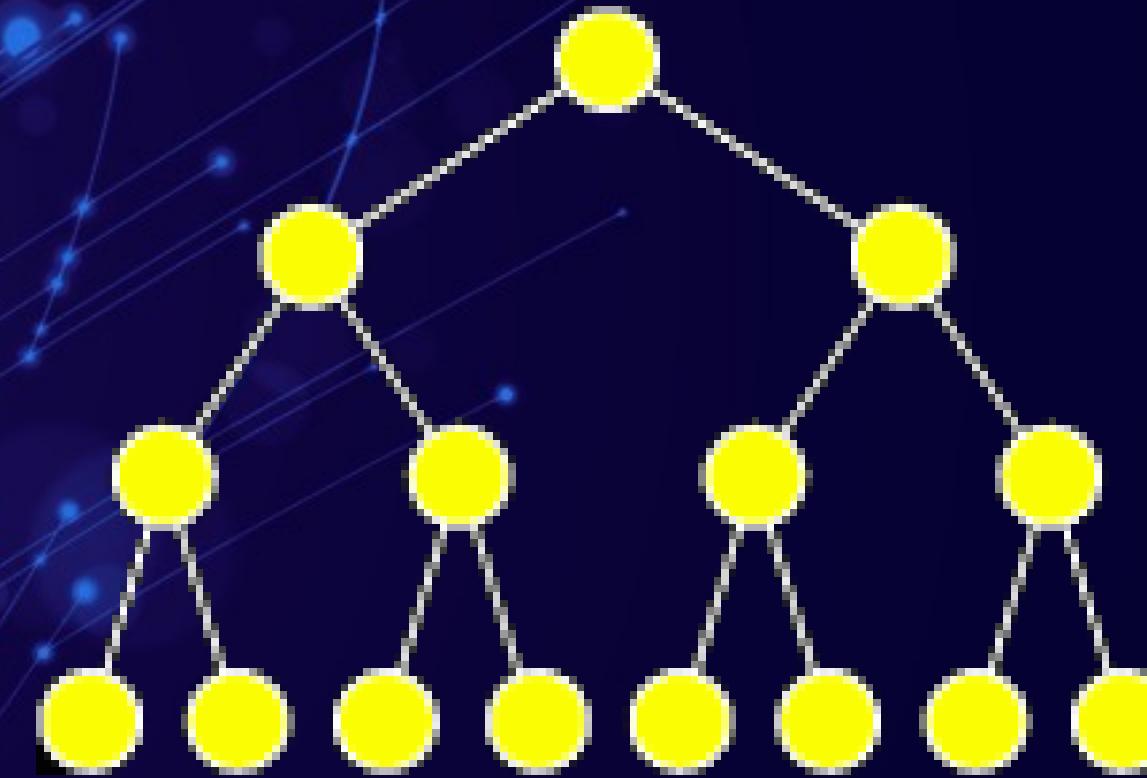
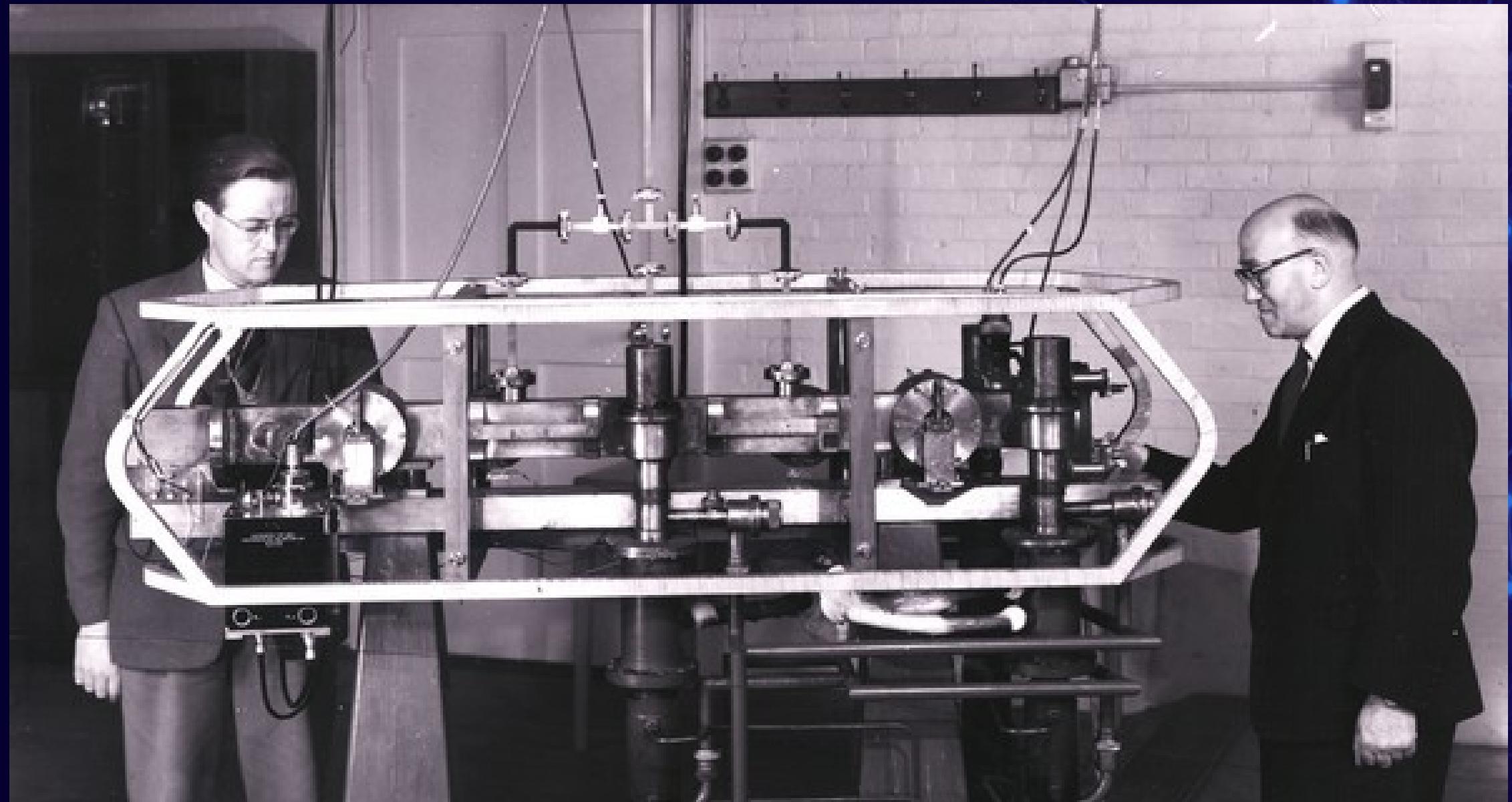


End of Penury ?



Centralized History

NTP



Centralized History

DNS



Roaming

Operator A / Operator B deal



- contractual
- commercial
- financial
- technical



“Roaming” & Centralization



one network

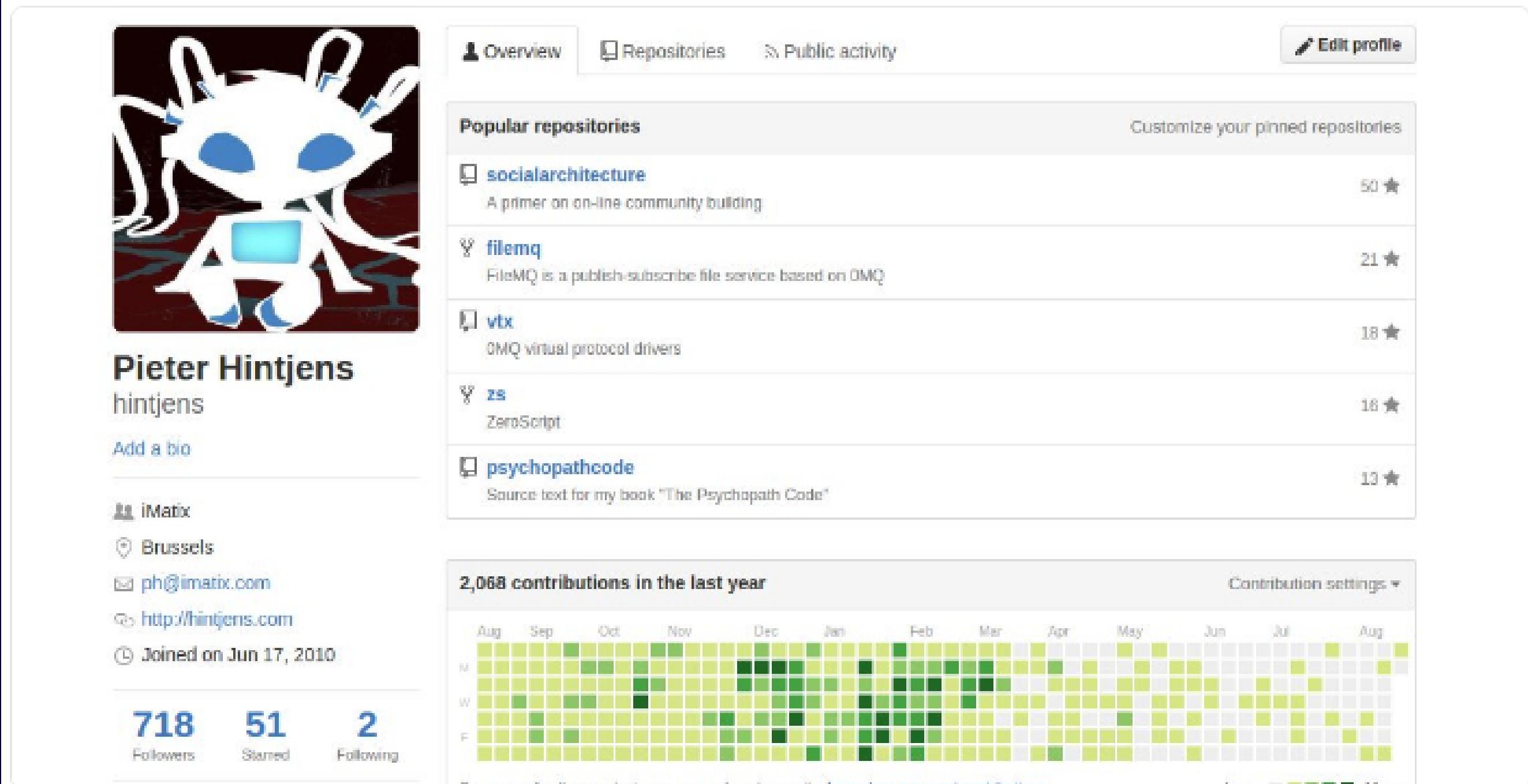
Conclusion

 **Pieter Hintjens**
@hintjens

En réponse à @hintjens @sivabudh @karmajunkie

this is what it looks like

À l'origine en anglais



The screenshot shows Pieter Hintjens' GitHub profile. At the top, there's a blue button labeled "Abonné". Below the profile picture, the name "Pieter Hintjens" and handle "@hintjens" are displayed. A message in red text says "En réponse à @hintjens @sivabudh @karmajunkie". The main content is a large text "this is what it looks like" followed by "À l'origine en anglais". Below this, there's a GitHub profile card for "Pieter Hintjens". The card includes a profile picture of a white rabbit-like creature, the name "Pieter Hintjens", the handle "hintjens", a "Add a bio" link, and social links for "iMatix", "Brussels", "ph@imatix.com", and "http://hintjens.com". It also shows statistics: 718 Followers, 51 Starred, and 2 Following. On the right side of the card, there's a list of popular repositories: "socialarchitecture" (50 stars), "filemq" (21 stars), "vtx" (18 stars), "zs" (18 stars), and "psychopathcode" (13 stars). Below the repository list is a heatmap showing contributions over the last year, with a legend indicating "L" for light green, "M" for medium green, and "D" for dark green. The heatmap shows a pattern of contributions peaking in March and April, and again in August.

Conclusion





Thanks

Xavier Raffin @xavierraflin