

Koloběh digitálního života

Klasikův epitaf praví:

„Budoucnost patří 5G“

20.září, 2018

Hynek Urban

Nokia



Proč 5G ?

From Vision to Reality – 1 GB per User per Day

Nokia vision from 2011:
"1 GB per user per day in 2020"

1 GB per day for you and you and you...



Mobile data in Finland 2017:
1 GB per day

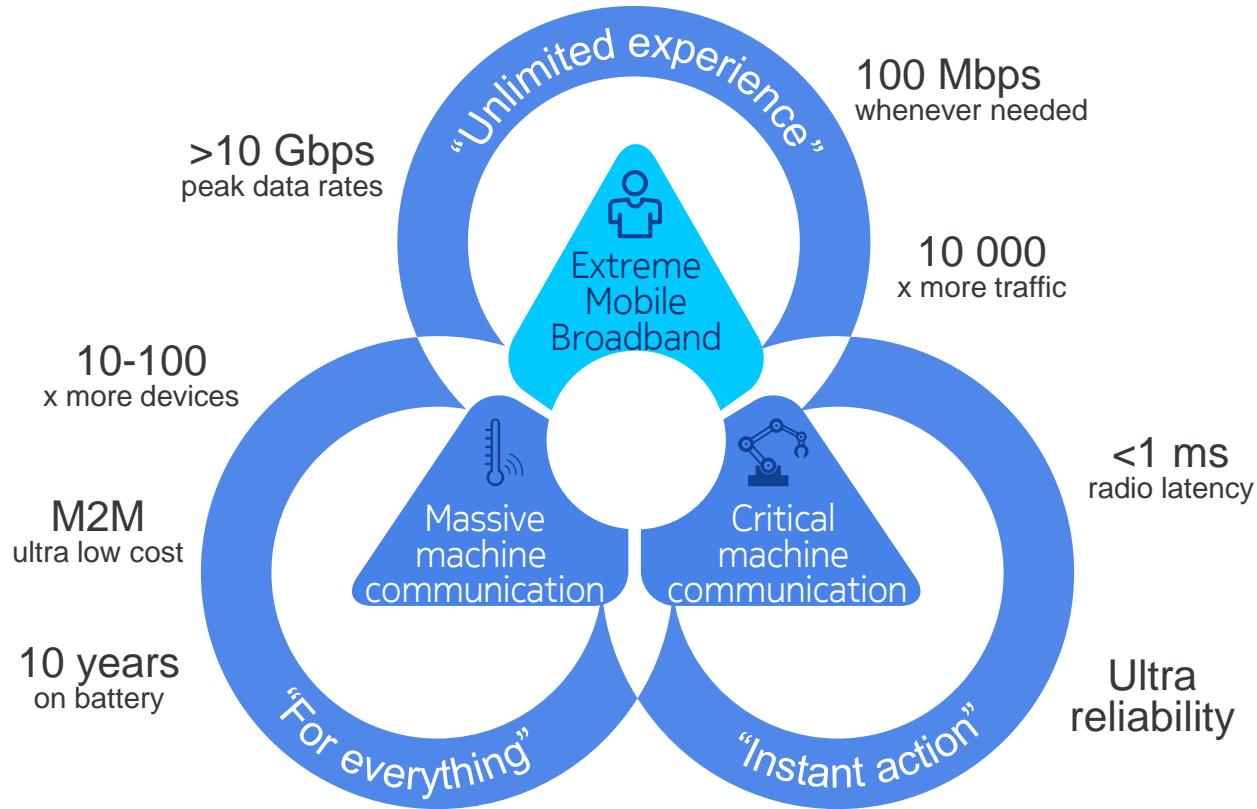
5500 TB/day / 5.5M population

1 GB/user/day

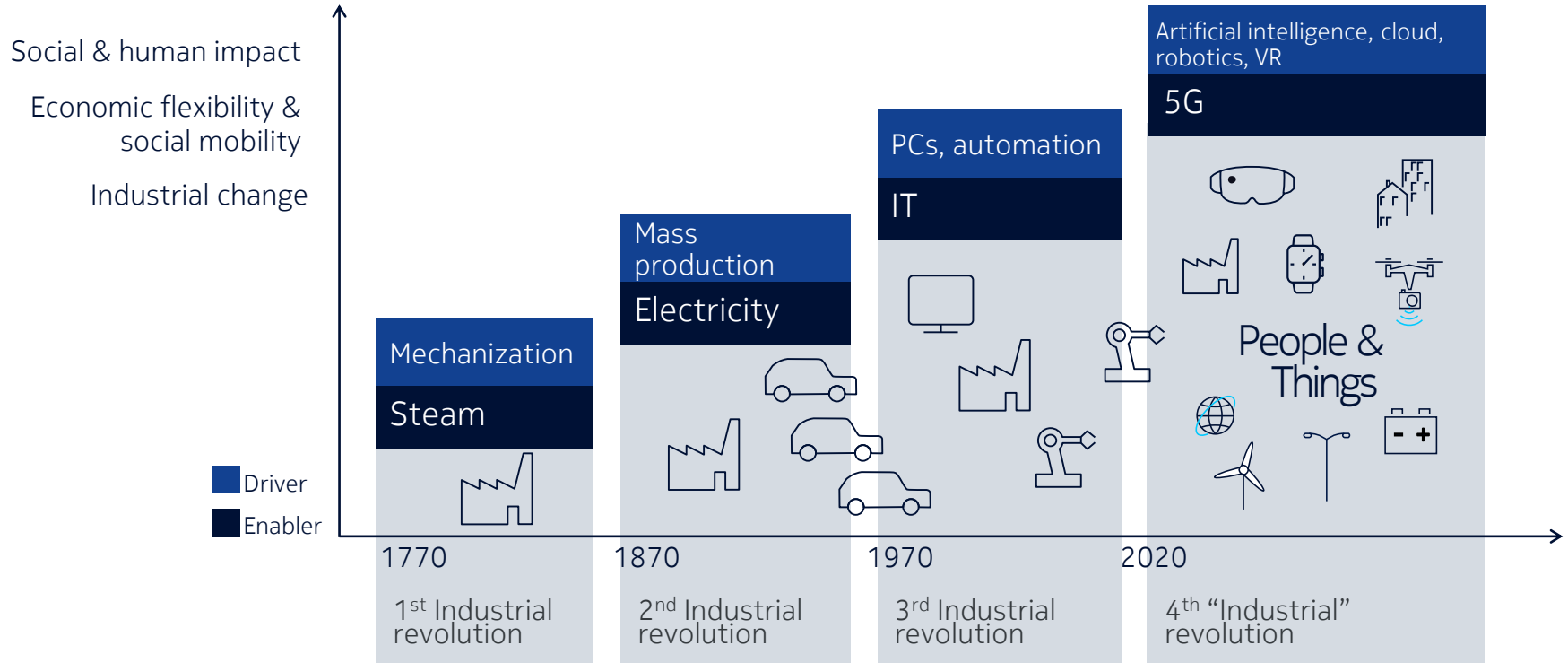


Austria approx 5000 TB/day = 0.6 GB/person/day. It will exceed 1 GB by 2020

5G Requirements and New 5G Business Models



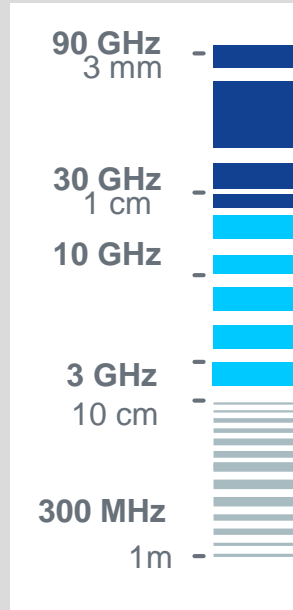
4th “industrial” revolution powered by 5G



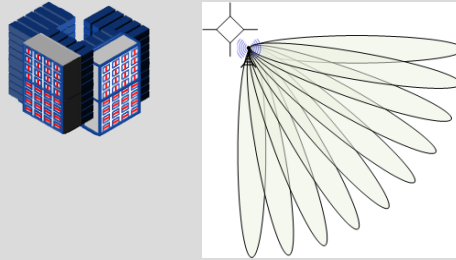
Stavební kameny 5G

5G Key Technology Components

#1 New spectrum



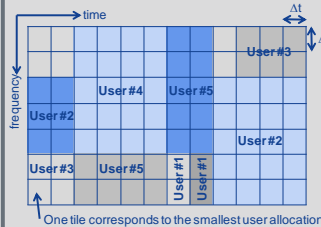
#2 Massive MIMO



#4 Multi-connectivity

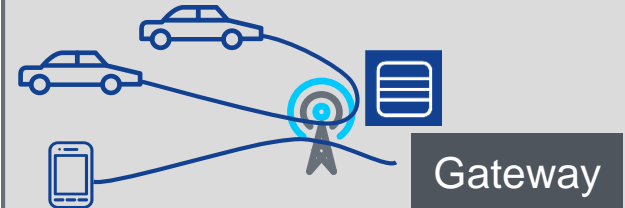


#3 Flexible frame design



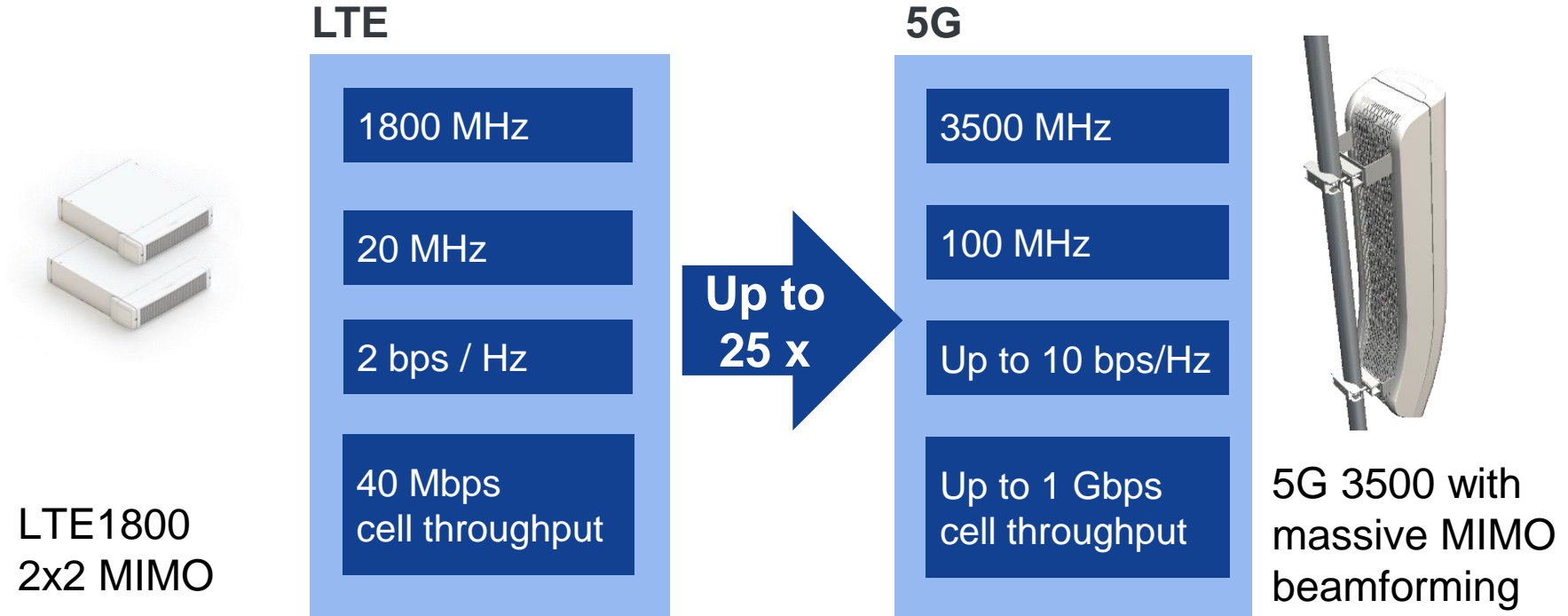
- Lean carrier
- Flexible size, control, TDD, bandwidth etc

#5 Distributed architecture

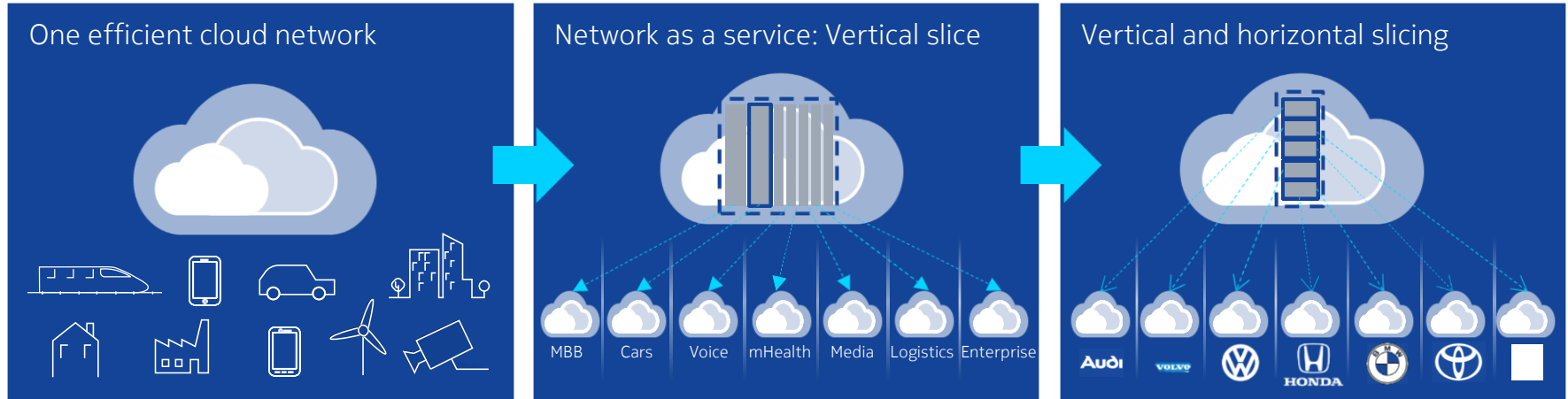


5G Boosts Cell Capacity by 25x

5x More Spectrum and 5x More Efficiency



5G Network slicing — Vertical and horizontal slicing support



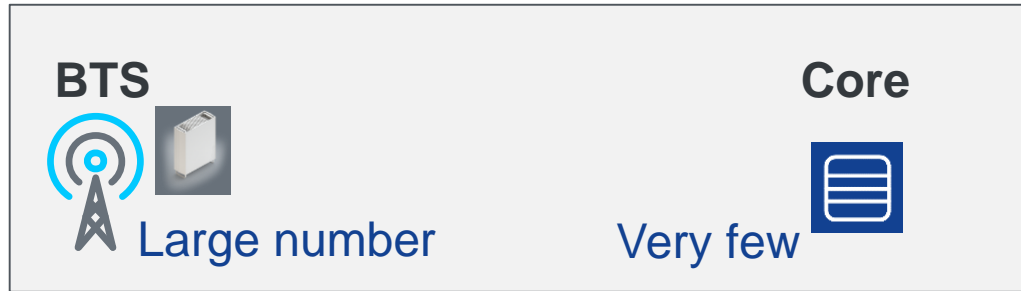
Today's network serving all services and devices

Vertical slicing for service verticals, device segment and customer segments

Vertical and horizontal slicing for MBB service + Consumer specific customization

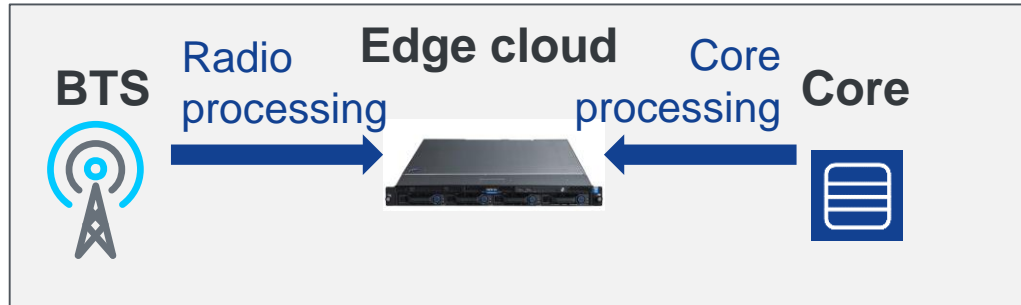
Network Architecture Evolution Towards 5G

Today



- Current radio is distributed
- Current core is centralized

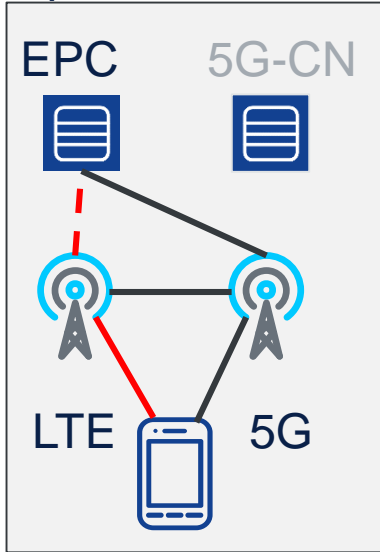
Target



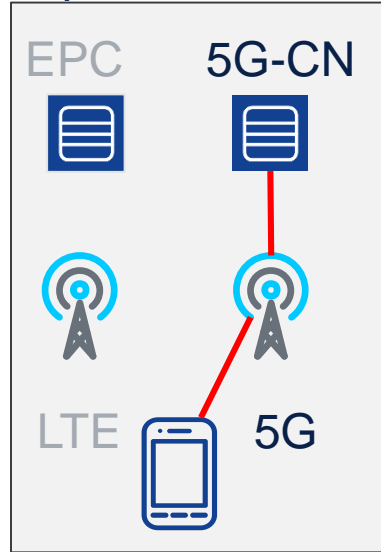
- Radio more centralized for faster scalability
- Core more distributed for low latency

Main Architecture Options

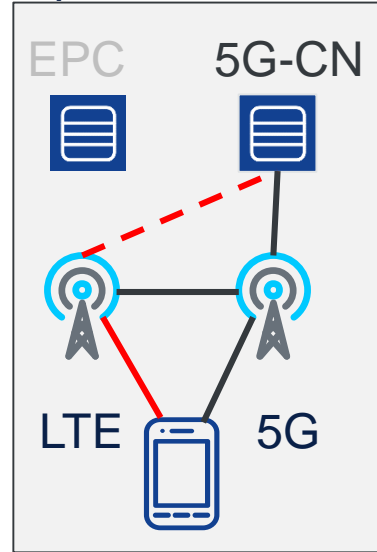
Non-standalone
Option 3X



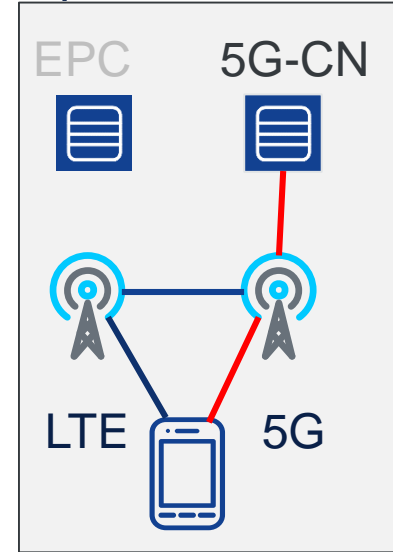
Standalone
Option 2



Non-standalone
Option 7X



Non-standalone
Option 4

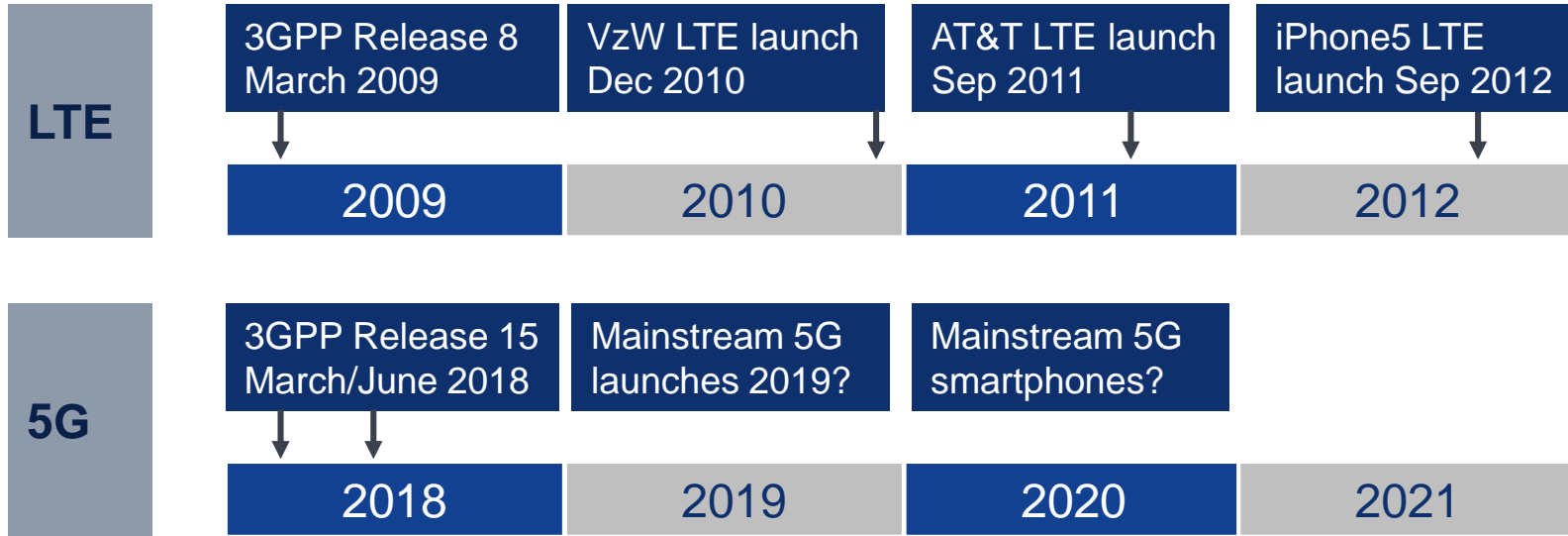


Option 5 = LTE connected
To 5G core (Known also as eLTE)

- - - = Control plane only
- = User + control plane
- = User plane only

Kdy to nastane ?

LTE History in 3GPP, US Operators and iPhone Support

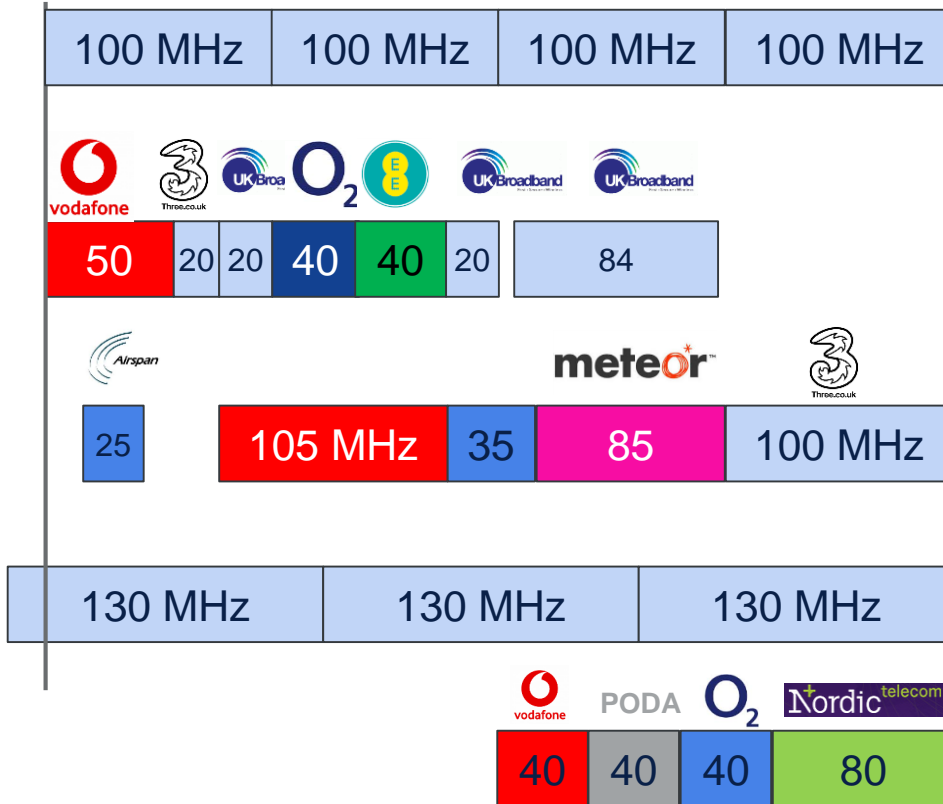


- LTE schedule is historical facts
- 5G schedule is still speculation but 5G launches and smartphone availability may happen faster than in LTE

3.5 GHz Spectrum Allocations

3.4 MHz

3.8 MHz



Nice simple split

UK April 2018

UK Broadband

Ireland 2017

Finland 09/2018

Czech 2017

Kde se bude 5G
používat ?

5G early market use cases

Nokia study unveils high value use cases and their business models

