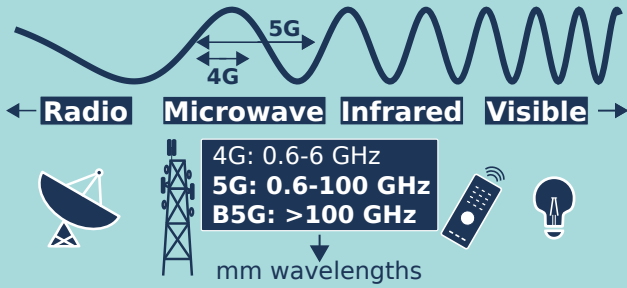


# 5G Smart Networks: Network Slicing

## What is 5G and how is it different from 4G?

it's **smarter, faster & more efficient**

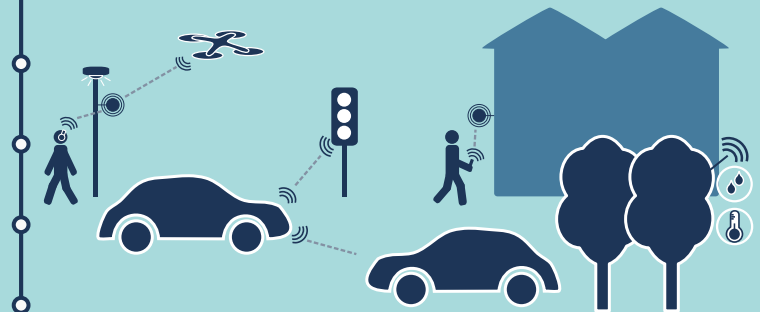
5G (& Beyond 5G - B5G) uses a much **larger frequency range...**



...so it needs new **infrastructure**:



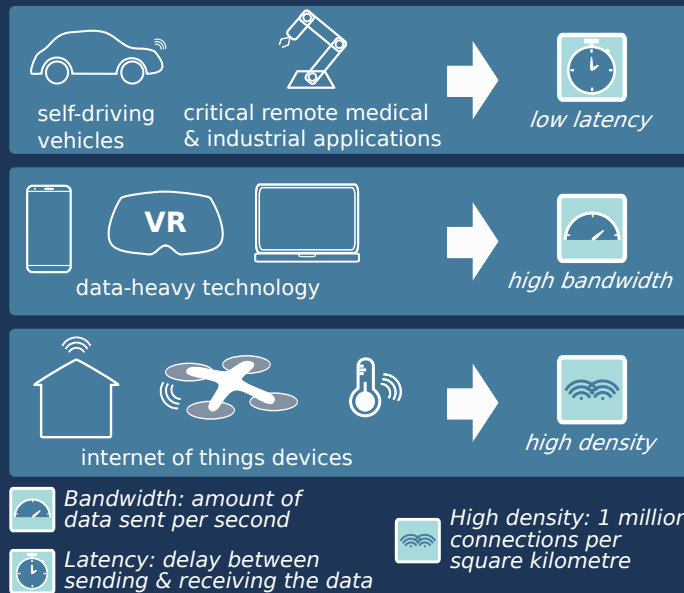
New frequency range → **greater capacity, more users & devices, faster speeds**



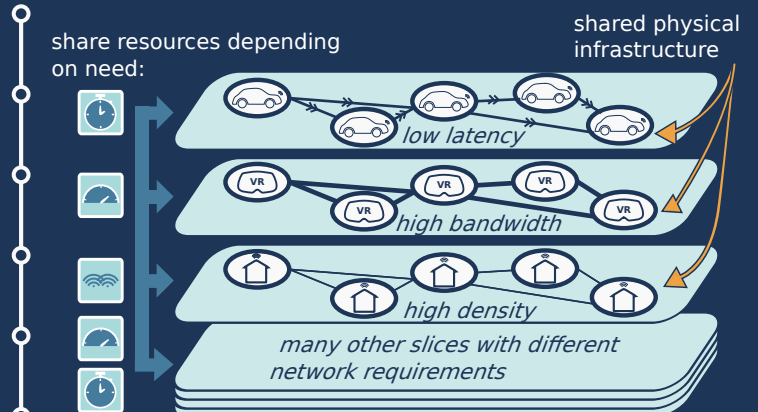
**Challenge: designing the network to cope with demands of many different users**

## What is network slicing and why does it matter for 5G?

**Problem:** Users have different demands:



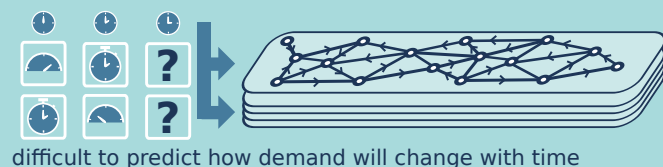
**Solution: network slicing** — separating user types virtually, using software



✓ Allocate different network resources to each 'slice', depending on requirements

## Network slicing: current research challenges

1. Network: **complex & constantly changing**



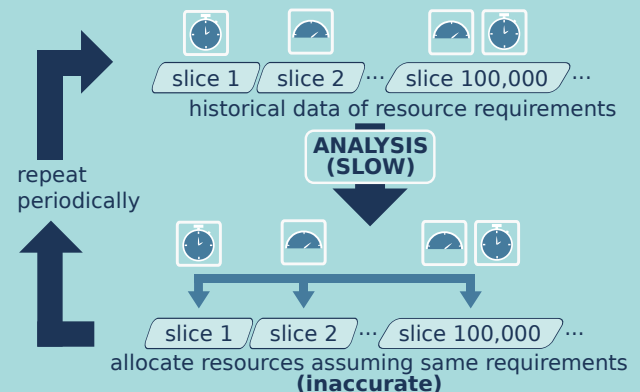
2. User data: **not available** due to privacy laws



3. Network resources: **limited**



Existing methods of sharing resources between slices are **slow and inaccurate**:



Demands change too quickly → user needs not met → delays & errors

**Possible solution: using machine learning techniques to allocate resources better**