



# Mobile Broadband and beyond

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# New services and business models



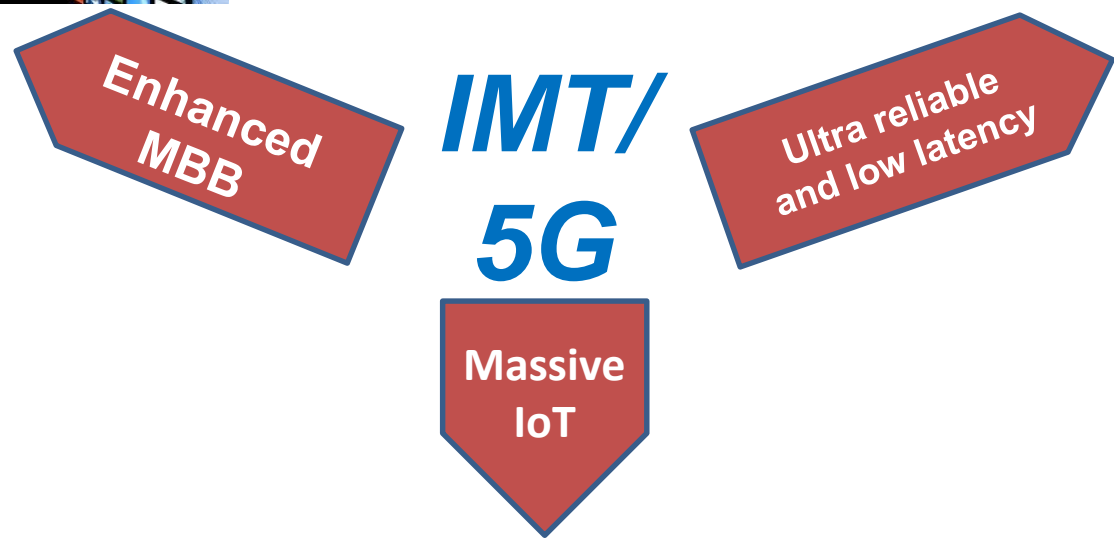
**Mobile Video  
HD/4K/8K**

**AR/VR**

**Automation  
Mission critical**



**Connected car**

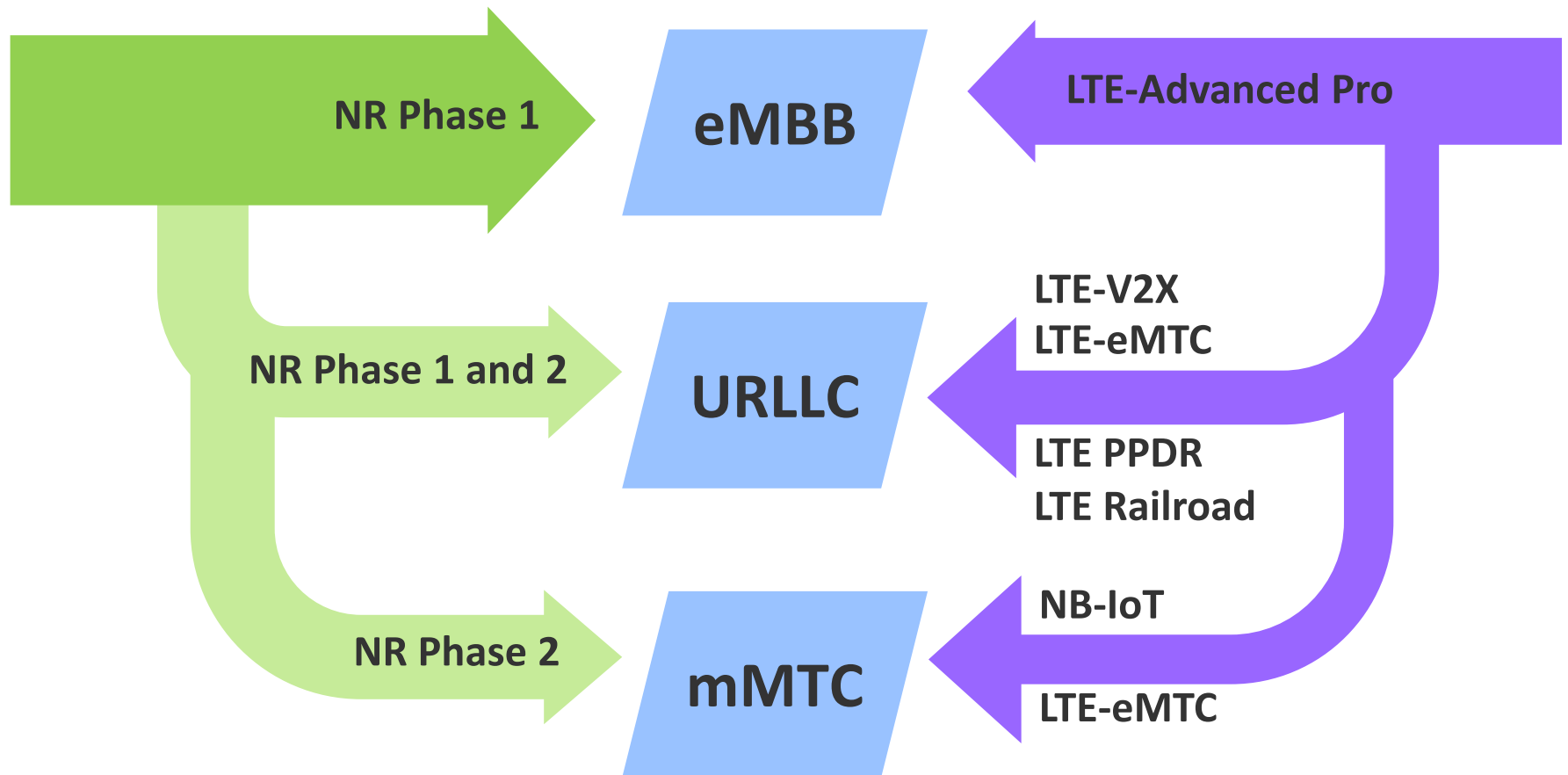


Союз операторов  
мобильной связи ЛТЕ

# IMT/5G radiointerfaces family

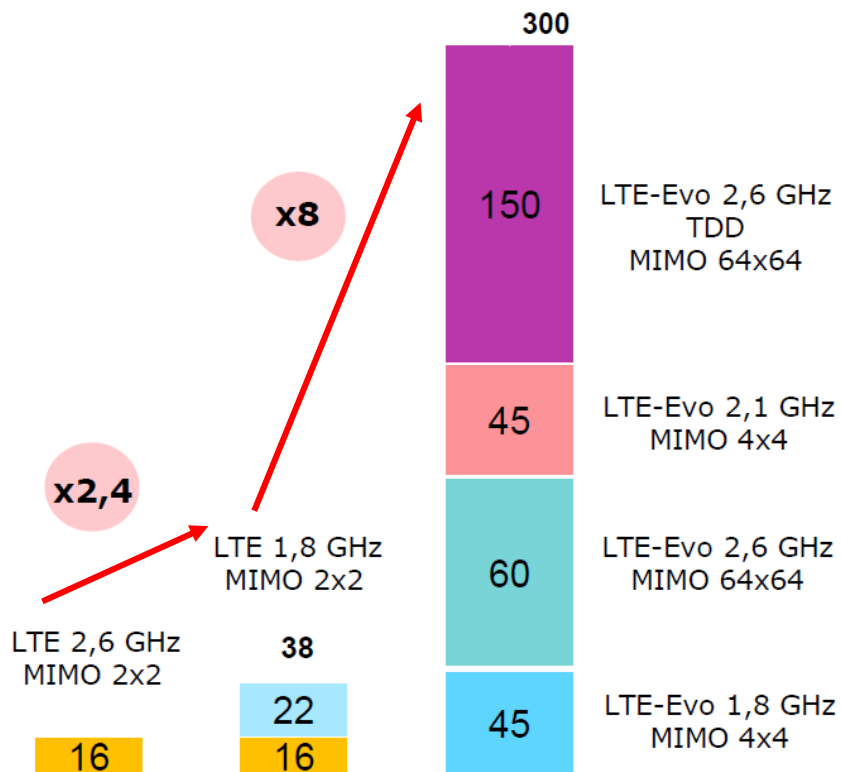
New Radio to address new performance and efficiency goals

LTE-Advanced evolution to start new services already today



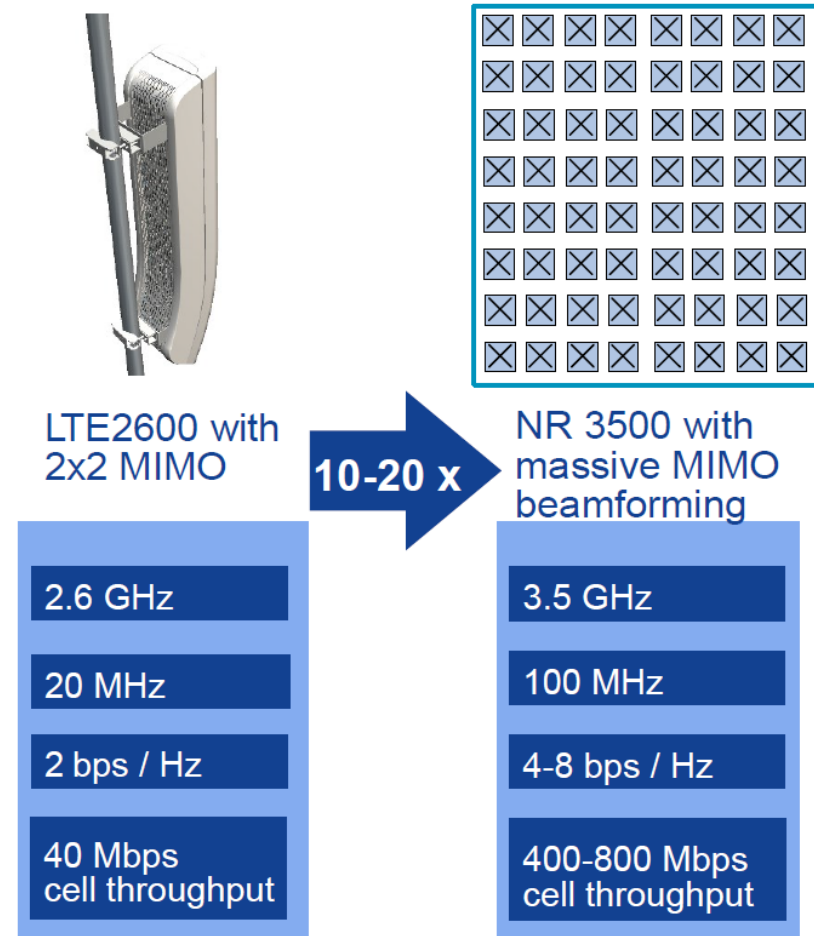
# Maximizing Mobile Broadband

## LTE evolution path



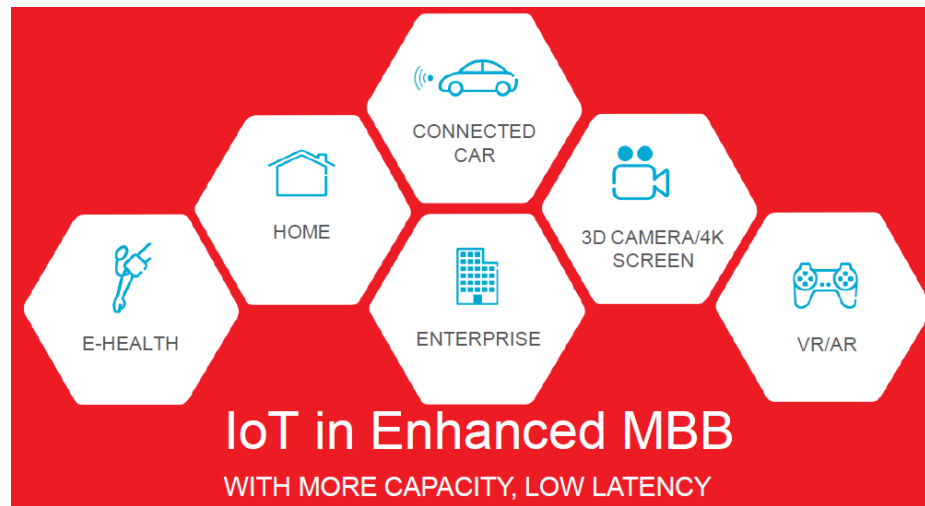
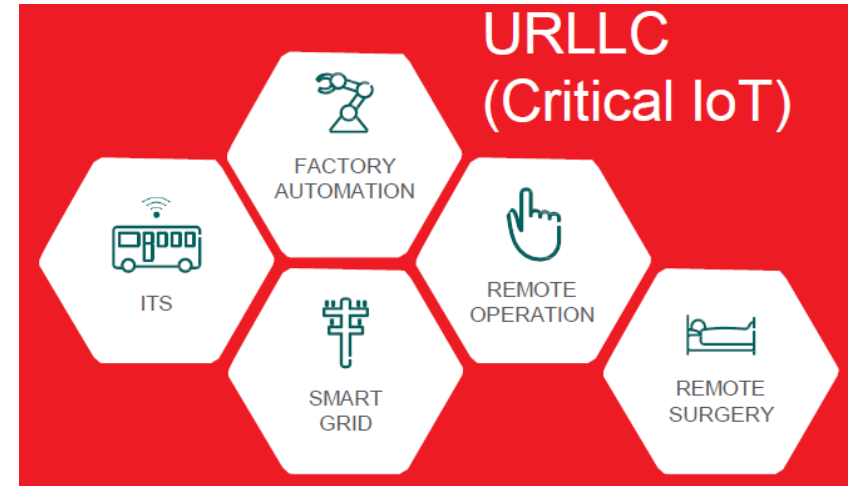
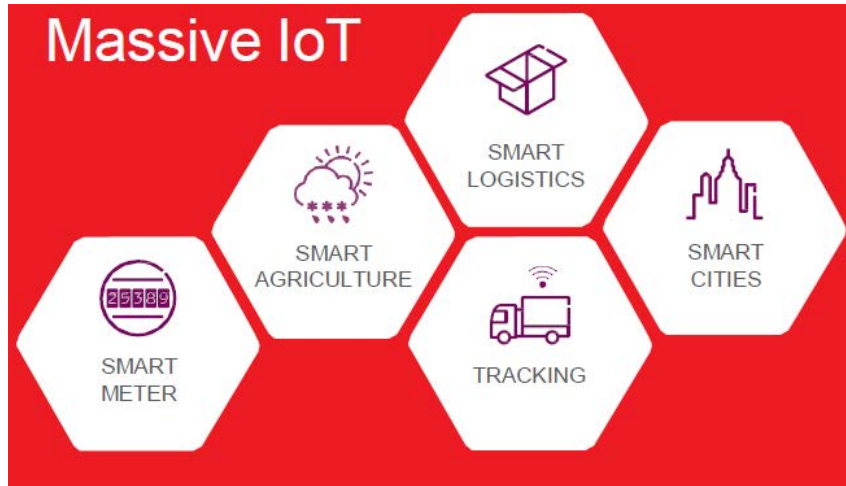
Average network throughput  
Russian MNO example

## NR path

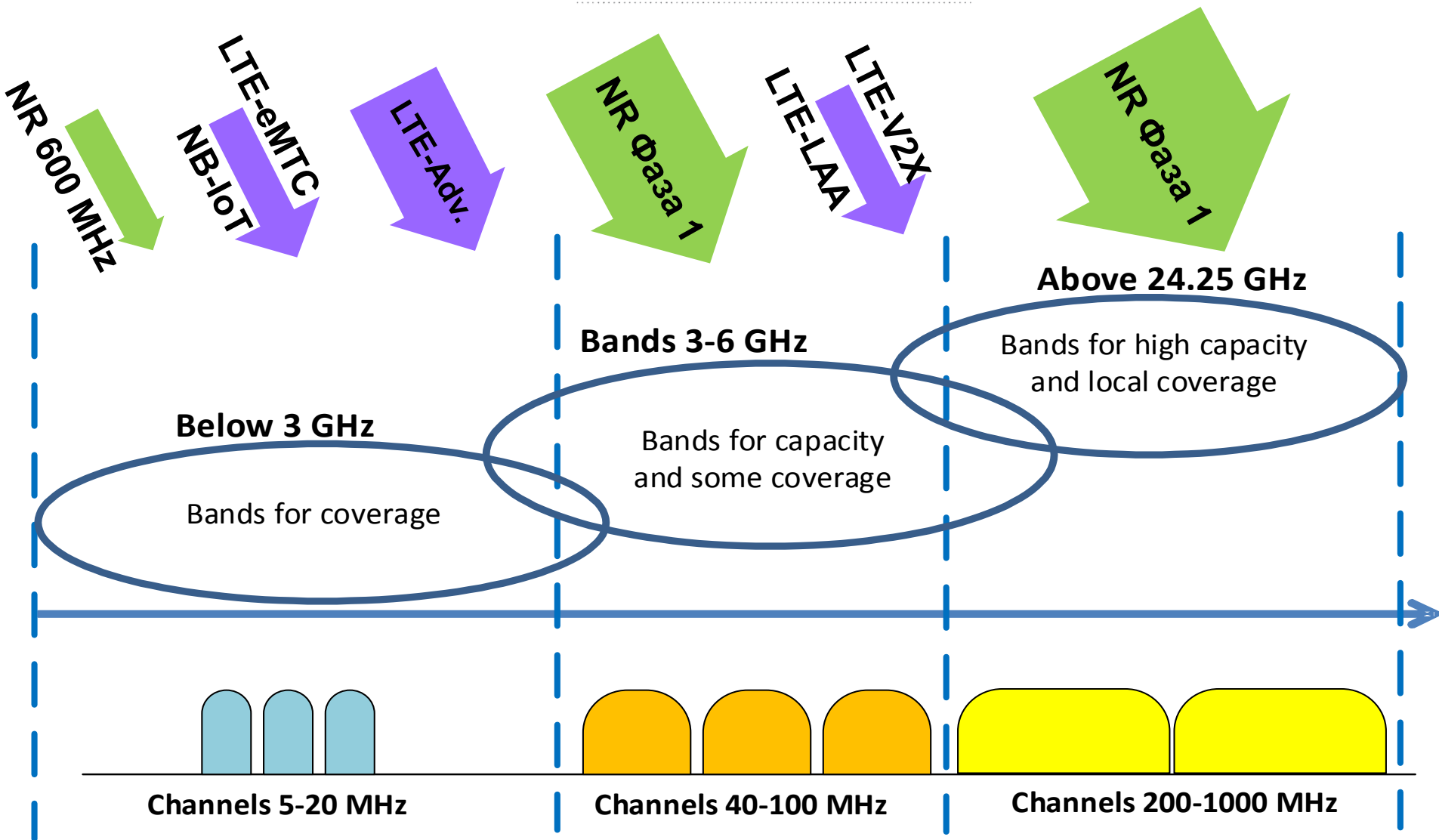


Союз операторов  
мобильной связи ЛТЕ

# IoT everywhere – from LPWAN to URLLC

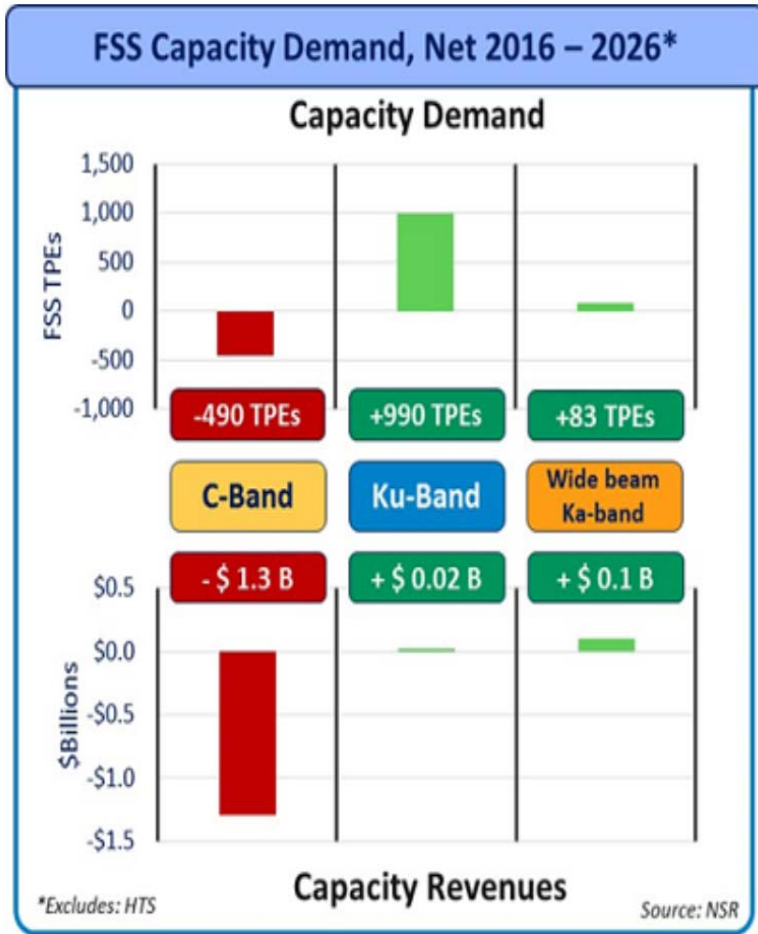


# IMT/5G spectrum

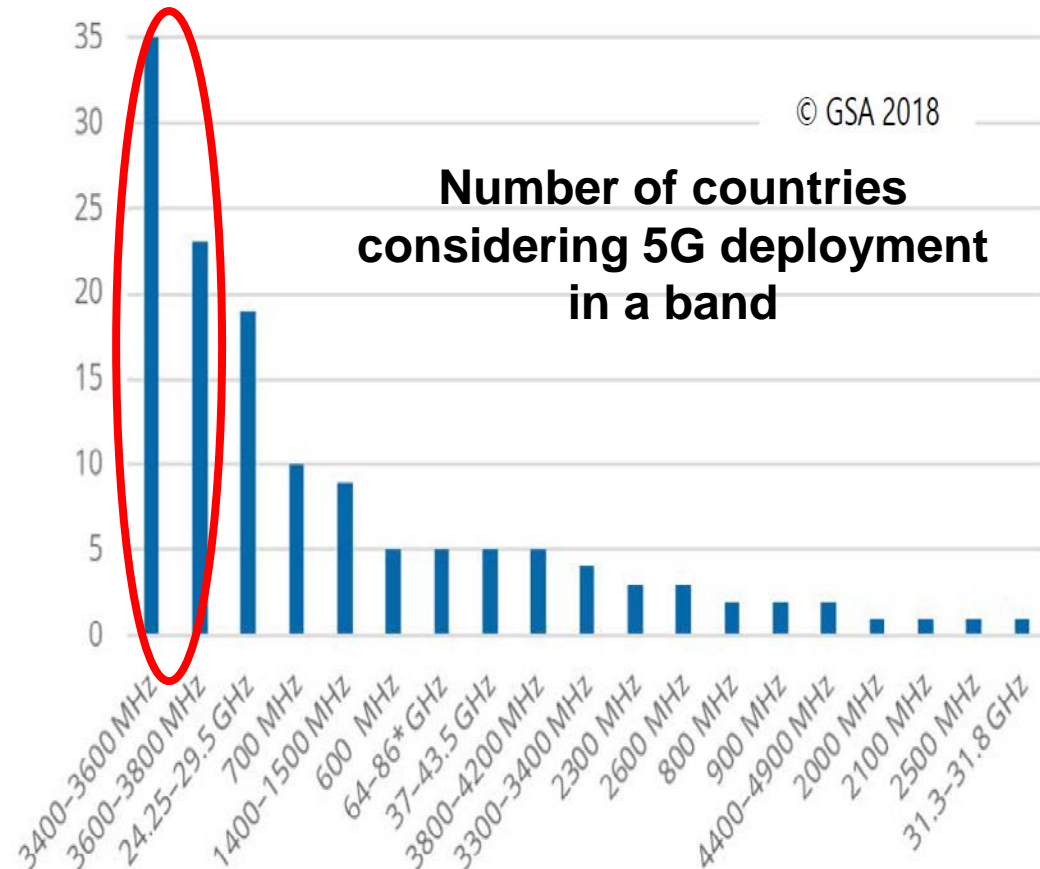


# C-band puzzle

## FSS stagnation in C-band



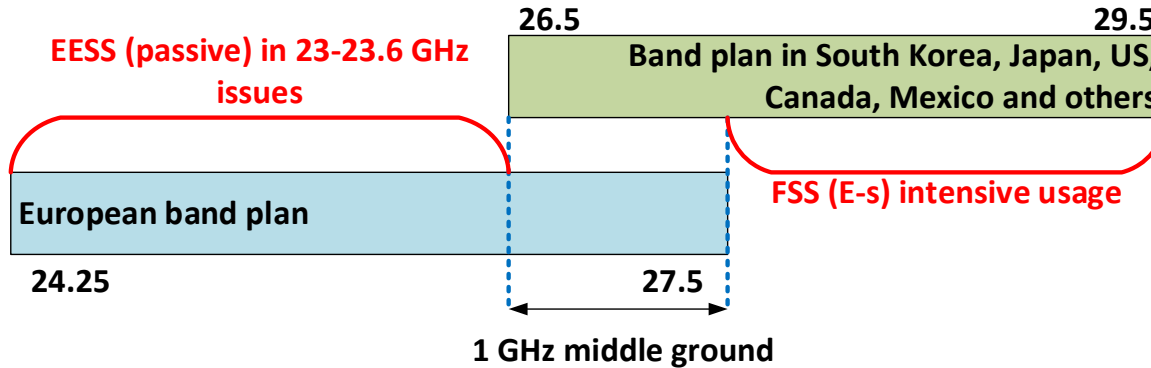
## 5G interest in C-band





# 27 GHz race

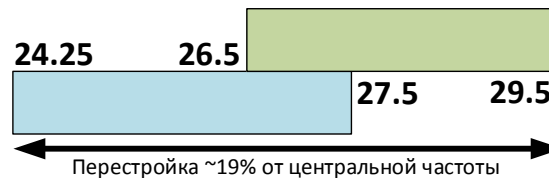
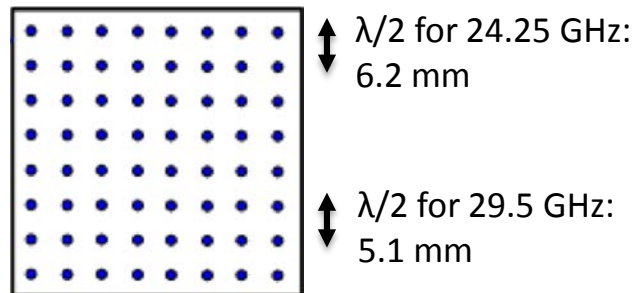
## Completion between 26 GHz and 28 GHz band plans



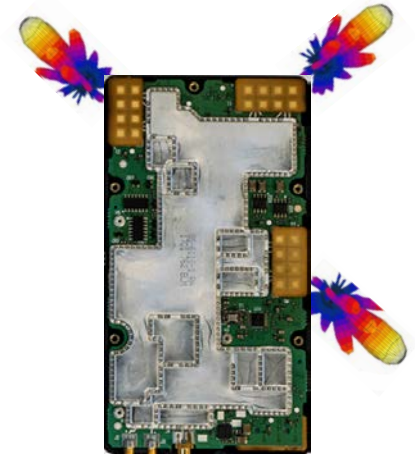
## Difficulties to implement both band plans in a single radio



NR base station in 28 GHz



To large tuning range to implement antenna arrays with current technology



28 GHz smartphone prototype

Союз операторов  
мобильной связи LTE





**Thank you for your attention!**