

# Transition to 5G

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# 5G Industry Progress it's now the Reality...

**First 5G  
Standard**

2017H2  
R15 NSA NR

2018H1  
DT+HW+INTEL

**First 5G  
NR  
Interoperability**

**First 5G  
CPE**

2018H2  
NSA NR

**First 5G  
Full Fledged  
Standard**

2018H2  
Huawei

**First 5G  
E2E Product**

**First 5G  
Smartphone**

2019H2  
NSA NR

2018H2  
Korea

**First 5G  
Commercial**





# Global Rhythm of 5G Commercialization



**5G Global Scale Commercial Launch will Start from 2020**

# 5G Oriented Business will Change Society

5G Use Cases Start From 4G

## Fiber from the Air

**100+**

FWA network services now

**10M+**

FWA subs. from Huawei in 2017

*FWA: Fixed Wireless Access*

## IoT: Internet of Thing

**10M**

NB-IoT chipset  
order in 2017

**250K**

NB-IoT Sites  
launched in 2017

Jointly Accelerate 5G  
Use Case Exploration with X Labs

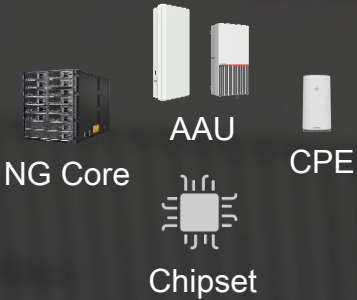


 <p><b>Top 10 5G USE CASES</b> Launched, MBBF 2017</p>	<p>Drone</p>  <p>Logos: e, 5, DJI</p>	<p>Cloud VR/AR</p>  <p>Logos: SoftBank, Microsoft, NOITOM</p>
<p>Mobile 4K Video</p>  <p>Logos: Tencent, 腾讯, Vodafone</p>	<p>Digital Factory</p>  <p>Logos: T, FESTO, TE, BOSCH</p>	<p>V2X</p>  <p>Logos: 中国移动, SAIC, TUM, Audi</p>
<p>Logos: BOSCH, KUKA, Audi, SAIC, PHILIPS, DJI, f, Tube</p>		

# Huawei Leads IMT-2020 5G Trial



## Most Complete E2E System



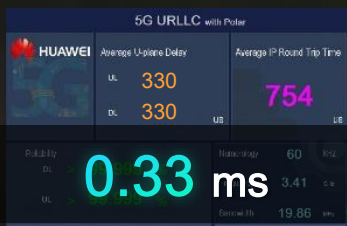
## Most Comprehensive Spectrum



## Highest Cell Throughput



## Lowest Latency



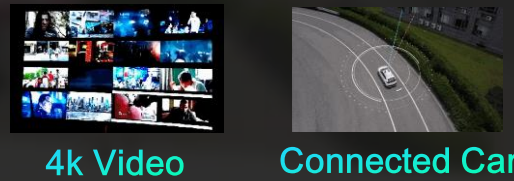
## Massive Connections



## Most Comprehensive Interoperability Test



## Live Use Cases to verify NR capability





# Open Collaboration for Global Unified Standard

DT | 2017 Oct. | (Live AR/VR)



Vodafone/BT | 2017 Dec. | (UL & DL Decoupling)



NTT DOCOMO | 2017 Nov. | (URLLC)



Telus | 2017 June. | (FWA)



LGU+ | 2017 Oct. | (IPTV)



IMT-2020 | 2017 Dec. | (VoNR)



30+

Leading Operators



# How to Transit to 5G



## Spectrum Ready

C-band & mmWave new for 5G, synergized with existing spectrum

## Site Ready

Site Antenna & Power & Transport Ready for 5G

## Service Ready

5G Oriented Business will Change Society



# Be Ready with 5G Spectrum



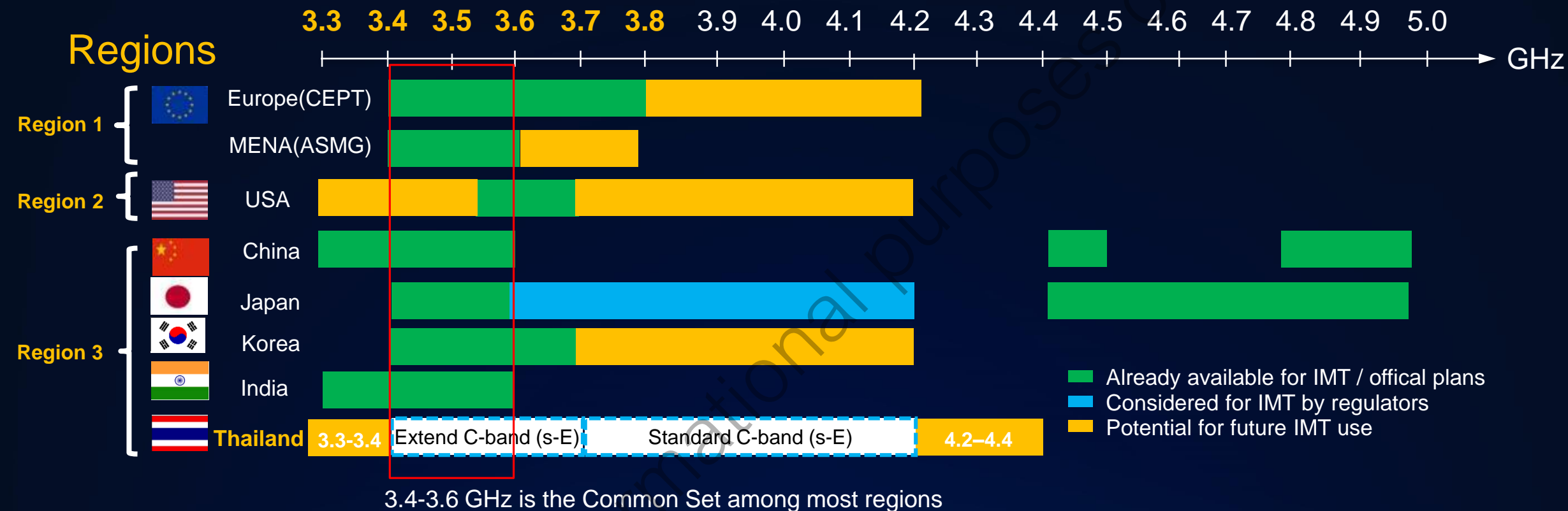
**All Spectrum for 5G**

**C-band for 5G global roaming**

**mmWave: Hotspot / FWA**



# Sub-6G Global Potential Band: 3.5GHz and 4.5GHz



## Huawei's Global Observation & Viewpoint:

- 3.4-3.6 GHz is now almost available globally, and it will be the "**Primary**" band for 5G services below 6 GHz
- Many countries are taking action in order to reach **200-400MHz for 5G**, especially in the range of 3.3-3.8 GHz

## Observation in Thailand:

- Majority of C-Band are already allocated for satellite.** Need to coordinate with Thailand Satellite operators.

# Be Ready with 5G Site

## Macro Site: Need More Space



## More Pole Sites



Work group looking for "street furniture"



3000+ Lite Sites in Chengdu City



# Top10 5G Use Cases

5G Unlocks A World Of Opportunities



## 1 Cloud Virtual & Augmented Reality

– Real-time Computer Rendering  
Gaming/Modeling



## 2 Connected Automotive

– ToD, Platooning, Autonomous Driving



## 3 Smart Manufacturing

– Cloud Based Wireless Robot Control



## 4 Connected Energy

– Feeder Automation



## 5 Wireless eHealth

– Remote Diagnosis With Force-Feedback



## 6 Wireless Home Entertainment

– UHD 8K Video & Cloud Gaming



## 7 Connected Drones

– Professional Inspection & Security



## 8 Social Networks

– UHD/Panoramic Live Broadcasting



## 9 Personal AI Assistant

– AI Assisted Smart Helmet



## 10 Smart City

– AI-enabled Video Surveillance



# 5G Push Thailand 4.0 to the Future



Health, Wellness  
& Bio-med



Smart devices, Robotics  
& Mechatronics



Digital, IoT &  
Embedded Technology



Food agriculture &  
Bio-tech



Creative, Culture &  
High Value Services

**5G will Enable the Digitalization for All Industries**





# Thank You.

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