

Practice and Step Forward to Incubate Globally Harmonized 5G Ecosystem

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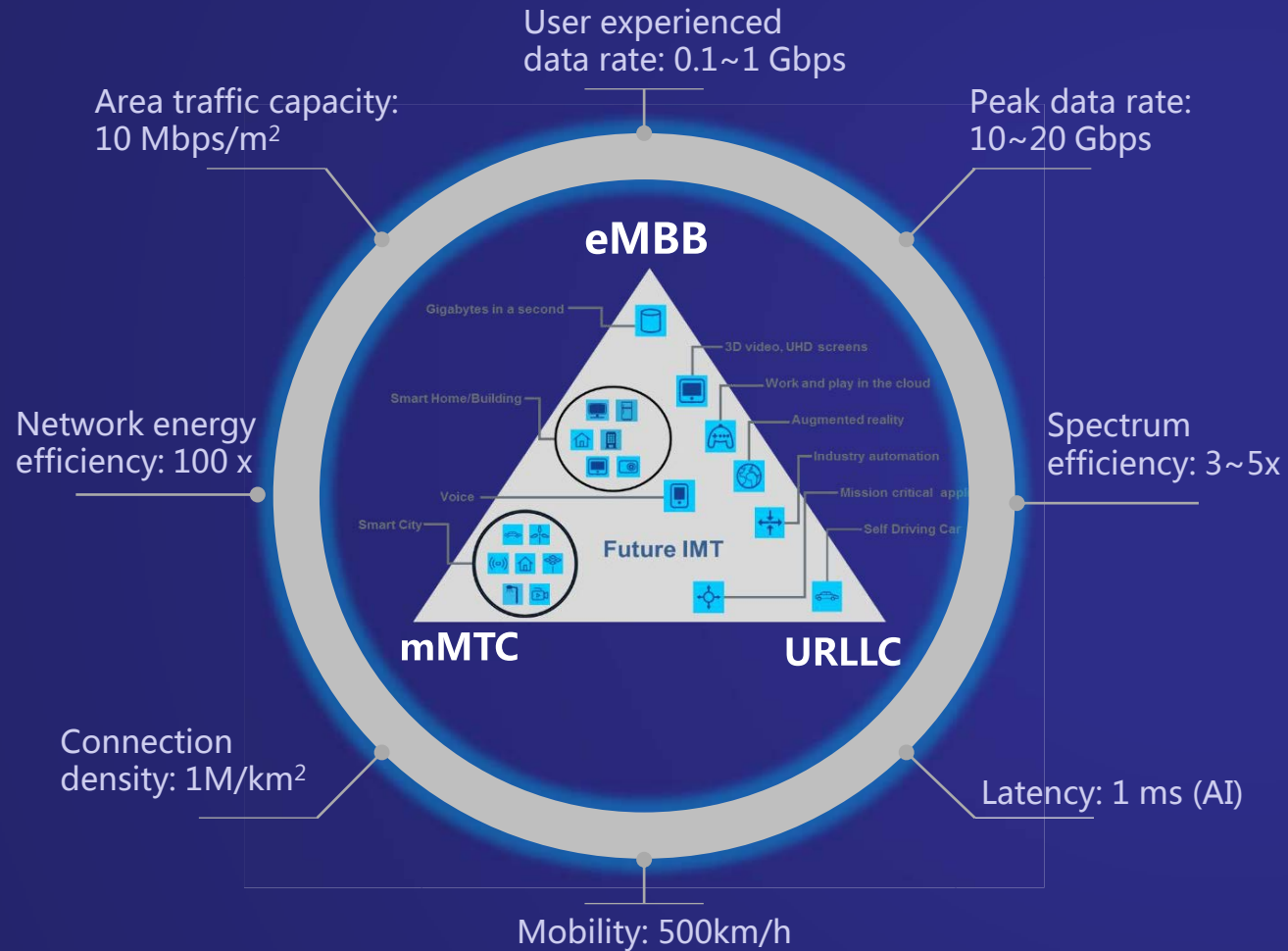
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5G Service Requirements



- 5G is set to meet the requirements of eMBB, URLLC and mMTC
- Mobile broadband and IoT ought to be supported in parallel, and integration with vertical applications is the key
- Mobility and seamless coverage are fundamental to make 5G a global success

Technical Innovation in 5G Standards

Unified Air interface framework

Flexible
System Design

NR
Technologies

Massive MIMO



Novel Network Architecture

Service
Based
Architecture

Network
Slicing

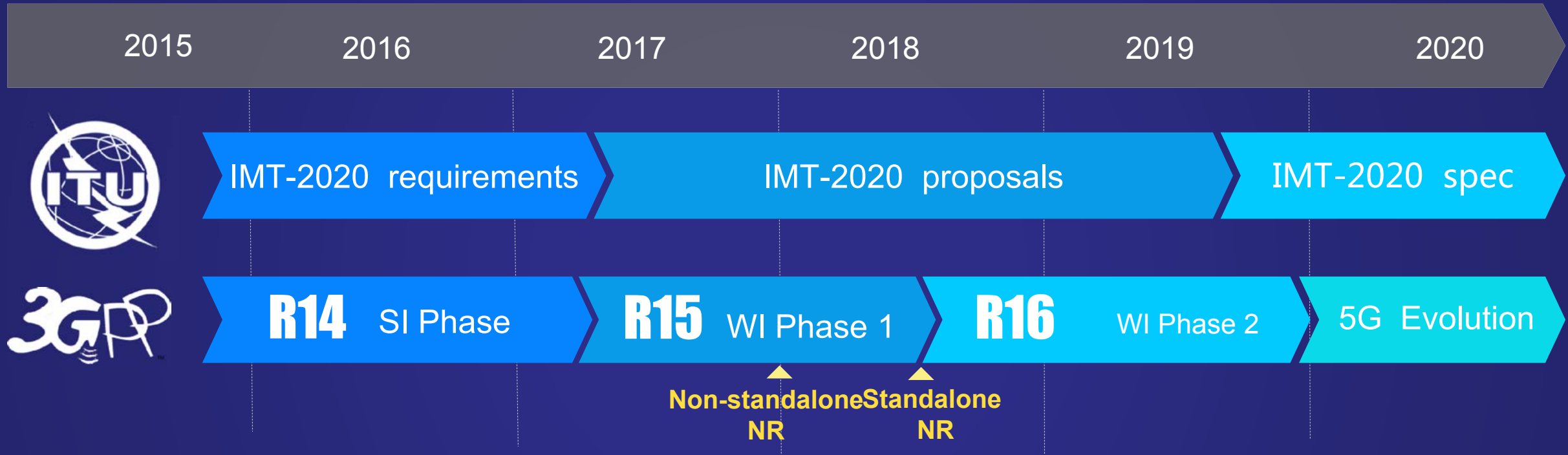
Edge
Computing

Security
Algorithm

...

- NOMA as a generic technology for various scenarios including mMTC, eMBB, and URLLC
- Highly flexible frame structure and super low granularity of resource utilization
- Novel coding schemes and Massive MIMO techniques
- Novel architecture, slicing, and edge computing enable a variety of valuable services

Accelerated 5G Progress



- Acceleration shall be addressed carefully with respect to equal importance of completeness of eMBB and IoT
- Less innovation and scarified competence of 5G standards have never been considered the consequence of acceleration

Views on 5G Spectrum

- Estimation of spectrum needs of 5G by IMT-2020(5G) PG

Deployment scenario	Macro	Micro	Indoor hotspot
Total spectrum needs for below 6 GHz	808-1078MHz	—	—
Spectrum needs for 24.25-43.5 GHz	—	5.8-7.7GHz	9-12GHz
Spectrum needs for 45.5-86 GHz	—	—	
Total spectrum needs for 24.25-86 GHz	—	14.8-19.7GHz	

*24.25-43.5 GHz for Micro scenario can also be reused in indoor hotspot

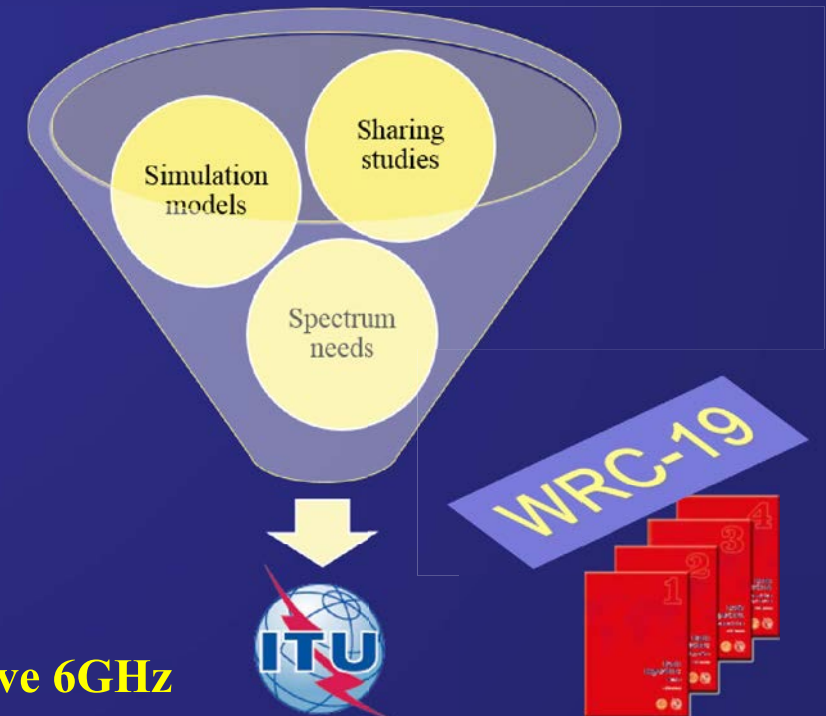
Frequency bands below 6GHz for connectivity, coverage, mobility and capacity

- C band is the core band identified for 5G in China
- 3.4-3.6GHz** + (3.3-3.4GHz, 4.4-4.5GHz, 4.8-5.0GHz), under negotiation for IMT identification in China
- 5G compatibility trial to evaluate the compatibility and required measures of IMT vs. FSS in 3.4-3.6GHz, to be finished in 2017

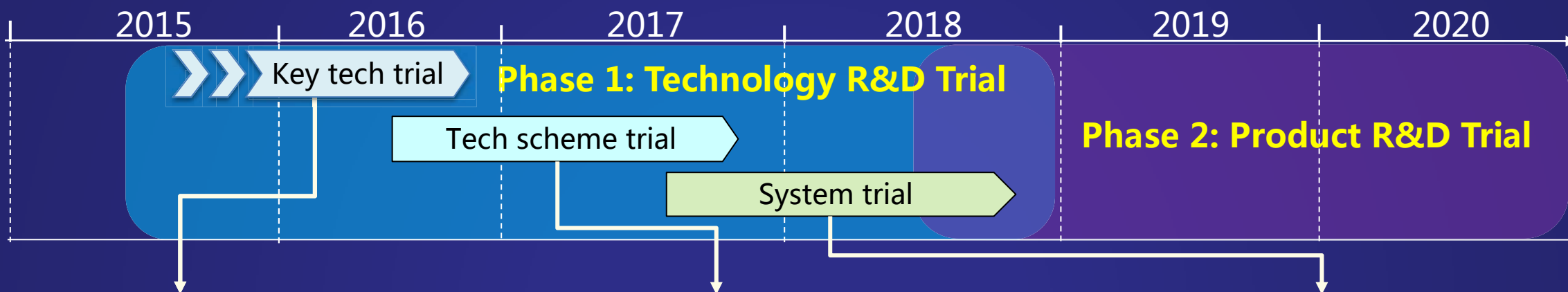
5G will support aggregation of frequency bands below and above 6GHz

High bands for High traffic off-loading

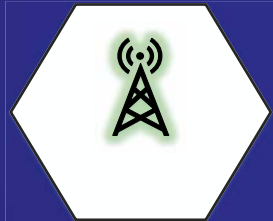
- High priority of 20-40GHz for 5G early market
- Tuning range to enable global harmonization



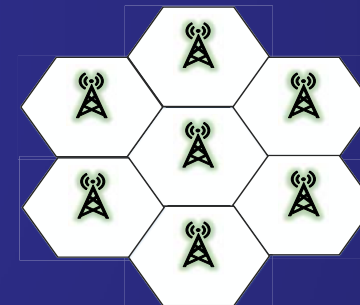
China 5G R&D Trial Roadmap



- Promote the R&D of 5G technologies
- Verify the performance of 5G key technologies
- Promote standard consensus building on 5G key technologies

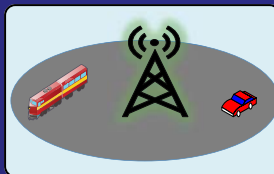


- Single BS performance test to verify the performance of 5G technology schemes

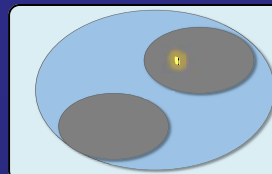


- Multi-BS performance test
- 5G typical service demo

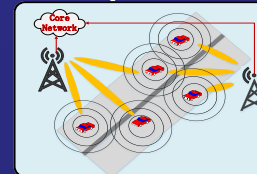
Test Scenarios for Steps 2 & 3



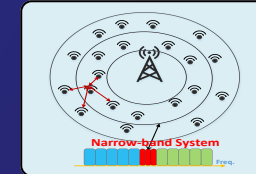
Seamless wide-area coverage



High-capacity hot-spot



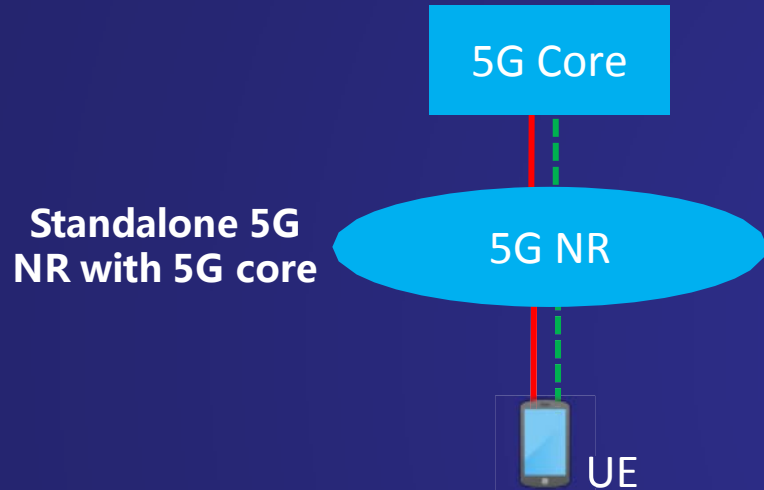
Low-latency high-reliability



Low-power massive-connection

5G Network Deployment in China

Standalone deployment guarantees the industrial vitality and sustainable development



Standalone deployment benefits :

- Enhance 5G competence via novel technologies
- Accelerate the maturity of 5G industry

Non-Standalone deployment serves :

- Early market needs for specific scenario

2018

2019

2020



Scale Trial

Pre-commercial Trial

Commercial Deployment

Future Step Forward

Use case & Scenario

- Collaborating with verticals to develop IoT along with eMBB

Standards

- Innovation and competence are of great importance of 5G success

Trial & IoDT

- Openness of regionally planned trials is conducive to ecosystem, while IoDT with respect to 3GPP NR specifications is encouraged

Spectrum

- Global coordination on heavily interested spectrums on both below and above 6GHz

Roll out

- Commercial deployments on the basis of globally harmonized standards benefit ecosystem building and continuous innovation



Thanks for your attention