

3GPP TSG RAN Meeting #79
Chennai, India, March 19 - 22, 2018
AI 9.1.2
RP-180218



Motivation for new SI on NR coverage

China Telecom

Introduction

- The coverage issue has attracted much interest in LTE phase
 - In TR 36.824, the system bottleneck in terms of LTE coverage performance was identified, and corresponding coverage enhancements were adopted in Rel-12
 - Then, the further coverage enhancements were developed during Rel-13 and Rel-14 work
- In NR, urban macro needs to provide continuous and ubiquitous coverage with higher carrier frequency than LTE [TR 38.913]
- Due to the higher carrier frequency, operators may need to add more sites to ensure sufficiently good coverage comparable to LTE. Adding sites is costly and requires lengthy negotiations with building owners etc. Operators will face great challenges in ensuring sufficient coverage and cost effective deployments for NR.

Potential sub-6G bands for NR

➤ [R4-1802135]

LTE re-farming band	Operators whose request is included in the frequency range
n1,n2,n3,n5,n7,n8,n12,n13,n14,n20,n25,n26,n28,n30,n34,n38,n39,n40,n41,n50,n51,n66,n70,n71,n74,n75,n76	NTT DOCOMO, China Unicom, T-Mobile USA, China Telecom, CHTTL, SoftBank Corp, U.S. Cellular, Verizon, AT&T, Sprint, CMCC, Etisalat, DISH Network, Orange, KT, Deutsche Telekom, British Telecom, Vodafone, Southern LINC, C-Spire, Swisscom, Telecom Italia, Telefonica, Telia Company.
...	..

New NR frequencies/bands	Operators whose request is included in the frequency range
n77, n78, n79	NTT DOCOMO, KDDI, SBM, CMCC, China Unicom, China Telecom, KT, SK Telecom, LG Uplus, Etisalat, Orange, Telecom Italia, British Telecom, Deutsche Telekom, Telstra,
...	..

Introduction

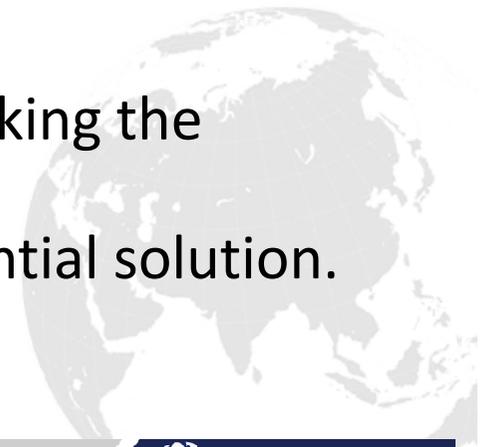
- NR Rel-15 standardization will be finalized in June 2018, but the coverage performance of control and data channels, has not been well studied and addressed.
- In the Study Item “Study on self-evaluation towards IMT-2020 submission”, performance evaluation of NR will be conducted, but the coverage of different channels may not be thoroughly evaluated.



Proposal

- Evaluate coverage performance of NR for eMBB
 - Develop necessary simulation assumptions and performance metrics for coverage study;
 - Evaluate the coverage performance of control and data channels for NR, and compare with TR36.824;
 - Identify any potential issues of control and data channels for NR.

- For any identified coverage issues:
 - Identify potential solutions;
 - Quantify the gain of each potential solution, taking the overhead into account;
 - Identify the specification impacts of each potential solution.



Thanks !



Esurfing 4G
Share the Beautiful Life



 **CHINA TELECOM**
Connecting the World