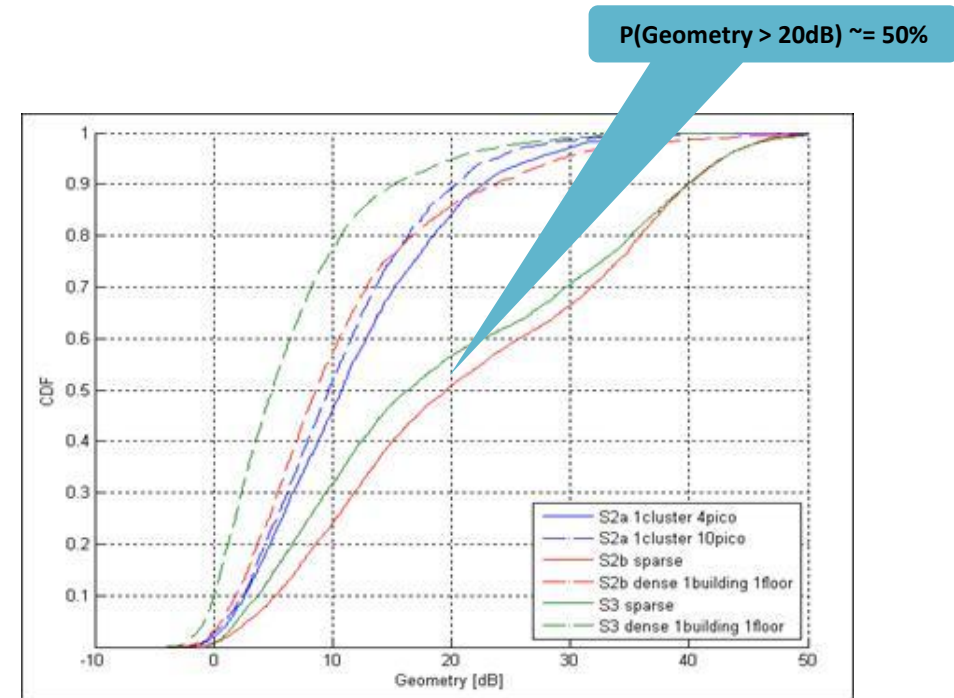
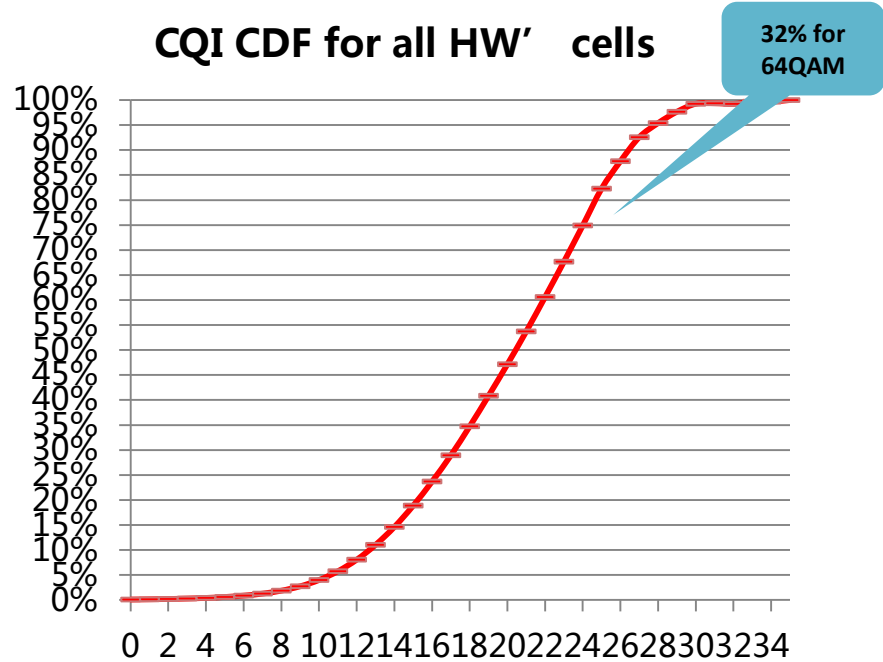


# Motivation for new work item proposal: DL 256QAM for UMTS

Huawei, HiSilicon, China Unicom

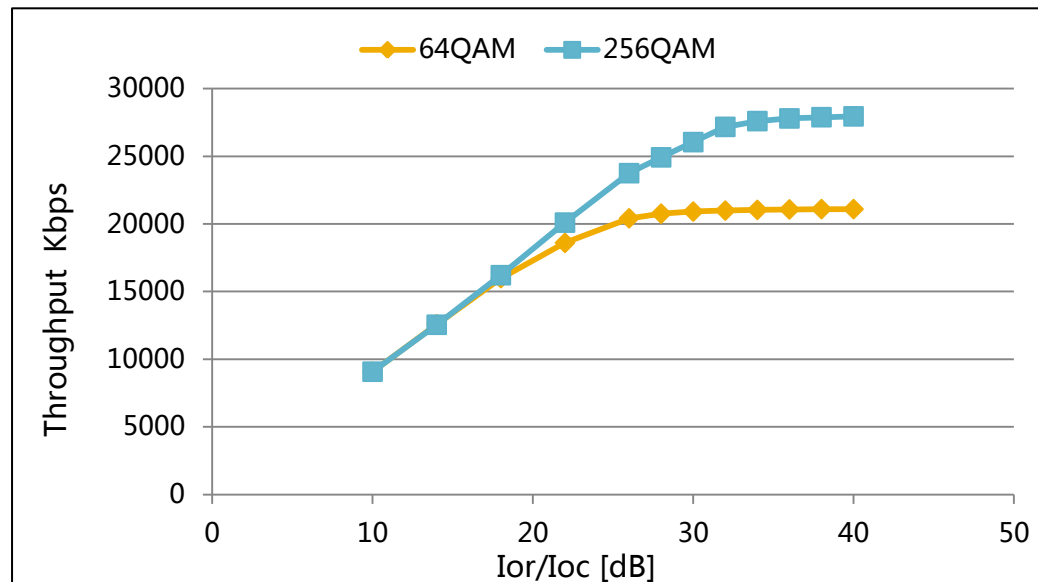
# Background

- UMTS is the 3GPP technology with largest number of subscribers
- Scenario with favourable radio conditions is the target scenario to support 64QAM
  - For indoor scenarios,  $P(\text{geometry} > 20\text{dB}) \approx 50\%$



# Motivation for introducing DL 256QAM

- Increase the peak data rate
  - ~30% increase in peak data rate with 256QAM respect to 64QAM
  - 256QAM performs better than 64QAM when geometry is above 20 dB



# Proposed WI Objectives

- Investigate the achievable peak data rate gains with DL 256QAM in scenarios where users can benefit from favourable radio conditions (RAN1)
- Specify the support of 256QAM as a downlink modulation scheme for UMTS
  - L1/L2/L3 aspects (RAN1/2)
  - Iub/Iur support (RAN3)
  - Specification of BS and UE core requirements (RAN4)
    - RF requirements