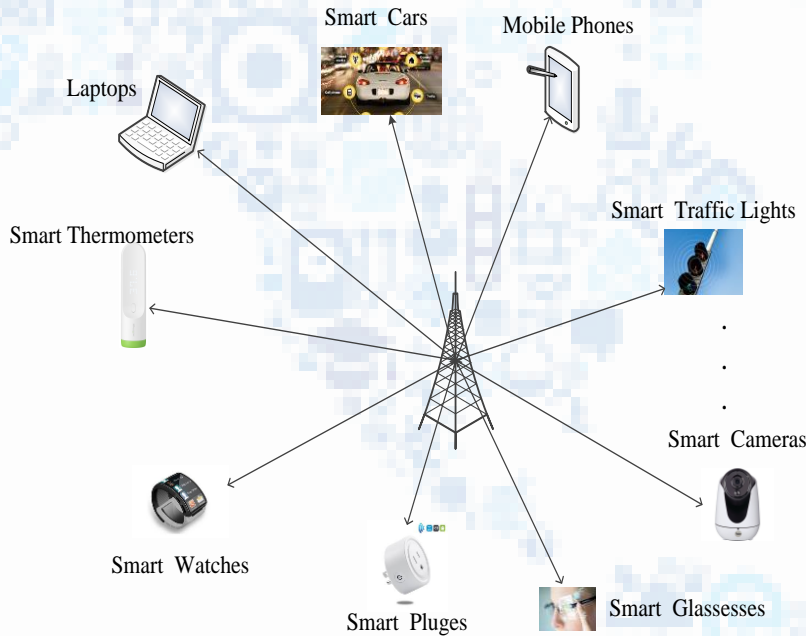# Non-Coherent Transmission in Ultra-Dense Device-Centric C-RAN
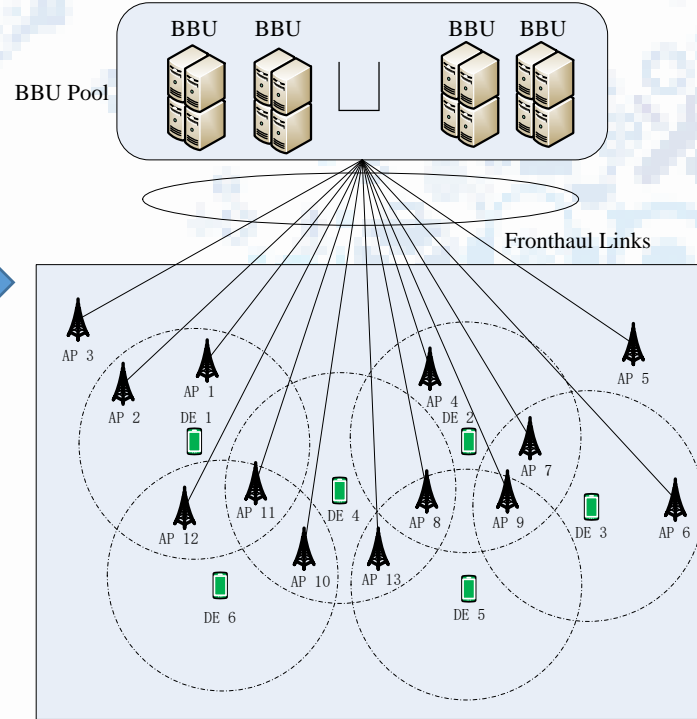
C. Pan, H. Ren, M.Elkashlan, A. Nallanathan and L. Hanzo

Massive Internet of Things

- Huge amount of devices, i.e., 50 billion devices by 2020
- Cause congestion for massive access
- Number of access points should be increased accordingly

## Proposed Network Architecture

Ultra-Dense Device-Centric C-RAN

- Each device is individually served by its nearby RRHs
- Different clusters may overlap with each other

Conventional Coherent Transmission

- Multiple APs coherently transmit the same data symbol to the device
- Phase-synchronization among APs is required

Proposed Non-coherent Transmission

- APs transmit different data streams to the device
- Phase-synchronization is not required
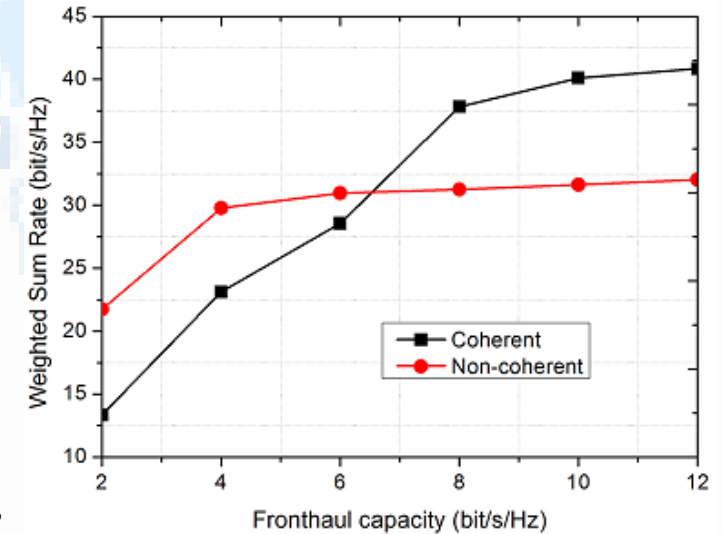
Conclusion

Non-coherent scheme outperforms its coherent counterpart when fronthaul capacity is low