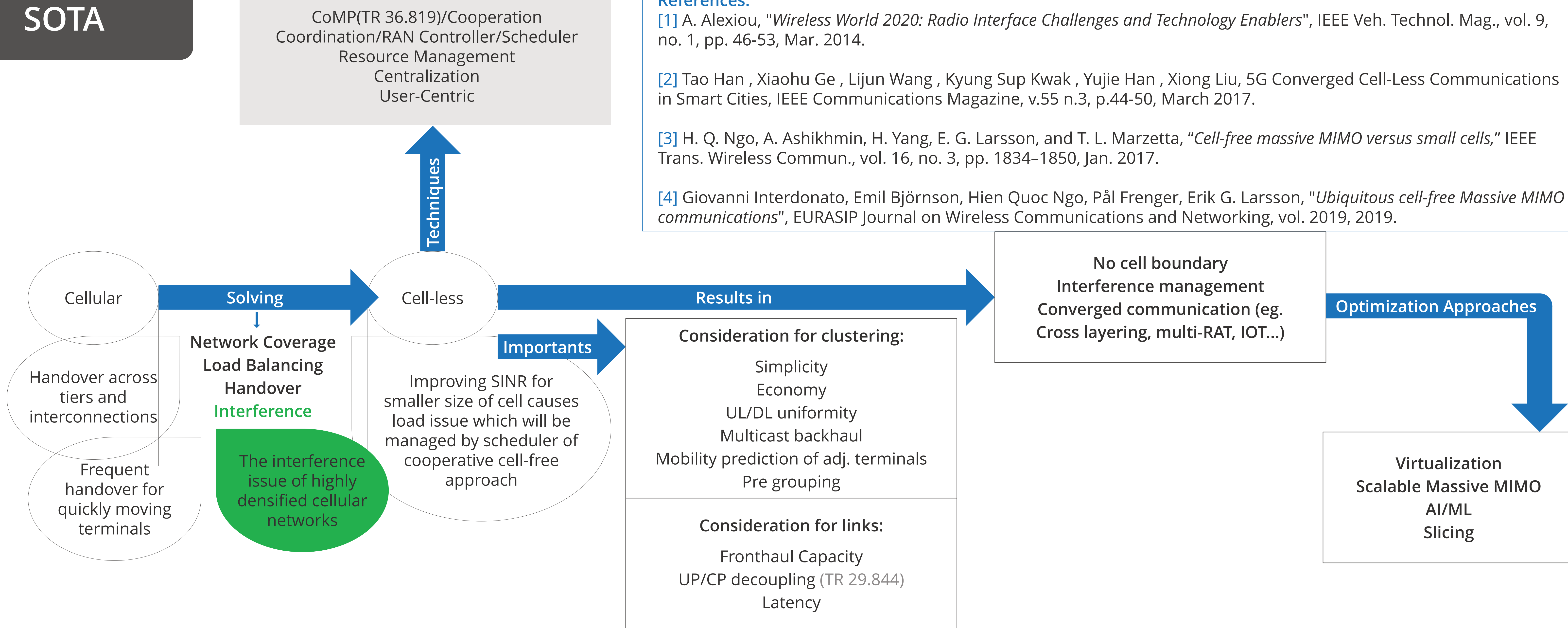
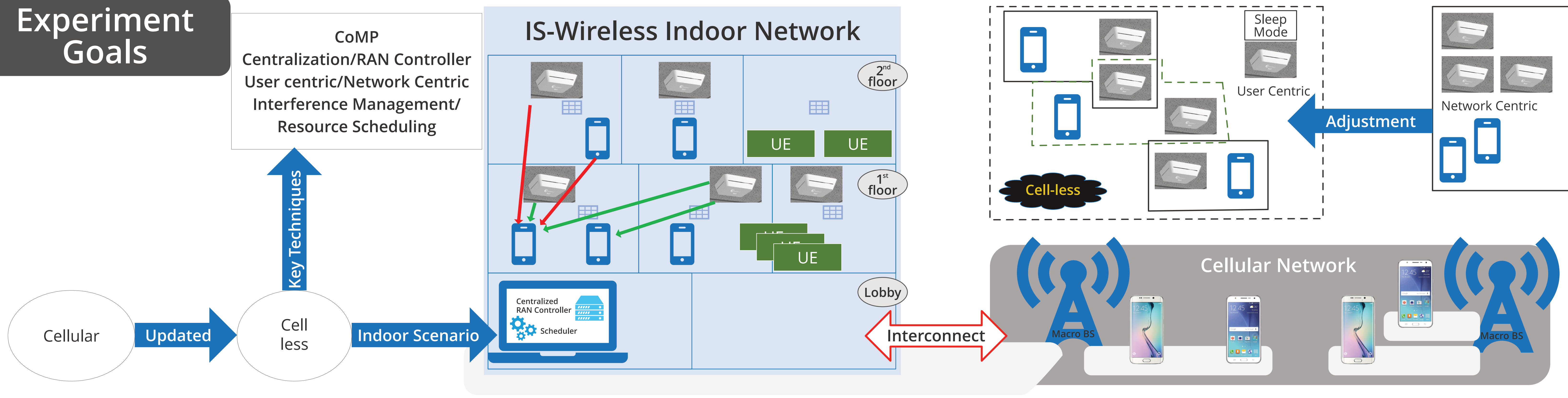


Cell-less RAN and cooperative schemes for interference management

SOTA



Experiment Goals



Technical Goals

Manage interference through proper resource scheduling algorithms by central scheduler which be able to:

- Adjust to indoor scenario
- Adaptive to 5G architecture
- Adjust to traffic load variety
- Remove cell boundaries beside reaching the target Capacity

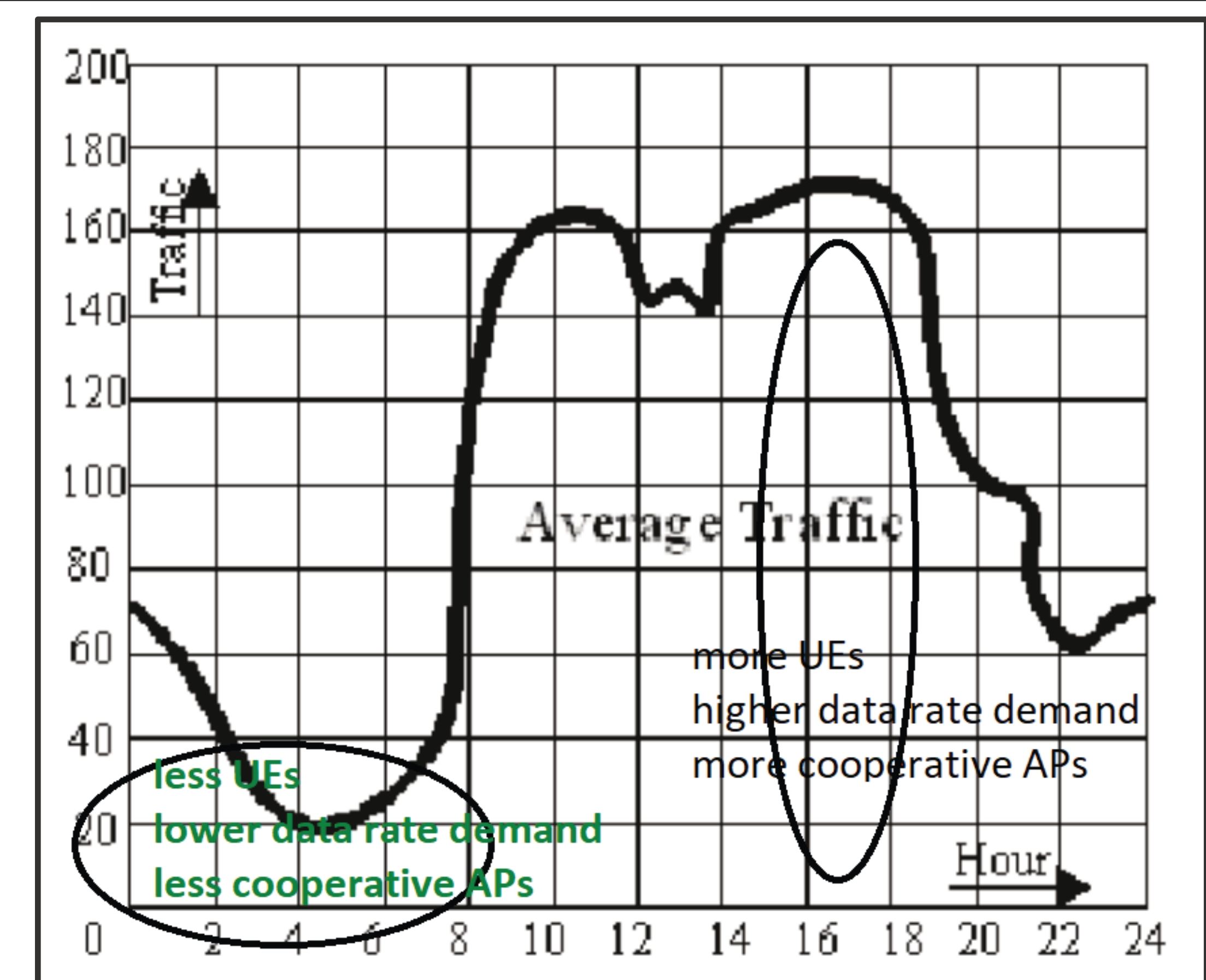
Candidate Key Techniques:

- Adjusted CoMP
- Centralization

Optimization Approaches

- Expand to outdoor massive MIMO scenario
- AI/ML
- Virtualization

Traffic Fig Reference(modified): https://www.researchgate.net/figure/Variations-in-Traffic-on-Hourly-Basis-in-a-Day_fig2_251714340



Conclusion

Cell-less radio access network (RAN), defined as a combination of:
Centralized RAN and cooperative radio resource management.

The goal:

Overcome interference.

approach the goal by:

changing the radio resource allocation paradigm from competitive to cooperative combined with the centralization of RAN.

Algorithms will be designed to manage the radio resources under this perspective.

Importants:

- Cooperative cluster forming
- Adaptive to 5G architecture
- Capacity
- Cooperative Radio Resource scheduling

Action List

1. Requiring Clarification:
 Network centric/user-centric Comp/cooperation-->dynamic clustering required adjustments
 Terminal Specifications

2. Algorithms Targeted:
 Cluster performing decision maker(UE/AP)
 Intra-building inter-floor interferences management Alg.
 Clustering Alg.
 Scheduling Alg.
Requirements:
 Terminal Specifications Review
 Scheduler Working Factor

3. Decisions to Be Made:
 RAN Controller Scheduler optimization concentration:
 Freq., Time, Space, Power, Hetnet, Roaming, RAT