Centria
CORE and CORE+ projects
Centria Field Trial Environment Heritage:

- Cellular network for research purposes
- Several LSA trials
- AAS research
- Competence of several technologies
  - WCDMA
  - LTE FDD 800, 2100
  - LTE TDD 2300
  - CRS
CORE+ Trial Environment
Centria Field Trial Environment Lessons Learned:

• Co-operation between different organizations
  – Frequencies
  – Building and maintenance of the network infrastructure
  – Testing facilities
  – Core network
  – Radio Network
  – UEs
• Feedback from companies
Centria Field Trial Environment
Future Plans:

• Development of the environment for different research areas:
  – Lisenced shared access
  – Active antenna system
  – Small cell
  – AAS utilization for LSA performance
• Possible research topics could also be:
  – VoLTE
  – Carrier Aggregation
  – Dense RAN
  – SON
  – SDN/NVF
• Need for more bandwidth
AAS
Heritage:

• Competence of the AAS system
  – AAS network optimizing competence
  – Deployment of the AAS network
• Competence of drive testing for cellular network
  – Overall testing competence
  – Especially AAS testing
• Research results
  – Vertical sectorization parametrization
  – Gain of performance
    • Overall gain performance
    • Gain performance in the cell edge
  – Results to support interference measurements
AAS
Lessons Learned:

• Importance of the co-operation
  – Regular work group meetings
• Agile approach
  – Use case planning is important for successful research
    • Analyze of the results $\Rightarrow$ Update of the use cases
  – Parallel work planning
• Flexible scheduling
  – Several demonstration in the same environment
• Notice for future work:
  – more focus to network planning and network simulations
AAS
Future Plans:

- LTE AAS, LTE-A AAS
  - Demand for more bandwidth (10-40MHz)
    - Band 1
    - Band 7
- Advanced MIMO/IRC for 4G
- Intelligent antennas and massive MIMO are essential part of 5G
  - More complicated antenna configuration schemes
  - Several intelligent network configurations utilizing AAS
- AAS utilization in LSA performance
  - Beam monitoring
  - Interference cancellation
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Centria Research and Development | www.centria.fi/tki
Contact Information

M.Sc. Marjo Heikkilä
Centria Research and Development
+358 44 4492 507
marjo.heikkila@centria.fi