

Ph.D. Student Position

Department of Radio Access Architecture, Munich, Germany

Description

- Nokia is a global leader in the technologies that connect people and things. With state-of-the-art software, hardware and services, Nokia is uniquely positioned to provide mobile operators, governments, and large enterprises with novel mobile network equipments and solutions.
- Bell Labs is the innovation engine of Nokia and a global research organization with sites in the US, Europe and Asia. The lab builds on the rich traditions of Bell Labs research, including the invention of UNIX, the C and C++ programming languages, modern information theory, the laser and the transistor.
- The department of Radio Access Architecture in Nokia Bell Labs, Munich, is offering the opportunity for a student to pursue a Ph.D. degree in communication engineering in collaboration with Vodafone Chair Mobile Communication Systems in TU Dresden, headed by Prof. Dr. Gerhard Fettweis. The thesis work will be conducted in Munich and it is expected to be completed within 3 years, with the possibility of one year extension.

Scope of Ph.D. Thesis

- Receive beamforming, enabled by multi-panel user equipment, is mandatory feature in 5G systems operating at high carrier frequencies.
- User rotations, erroneous panel switching, smaller measurement accuracy and maximum permissible emission exposure are multi-panel user equipment related factors that can have an impact on mobility procedures.
- The objective of the thesis is to develop and test new concepts that provide seamless user mobility in 5G networks comprising nodes operating at high carrier frequencies and user equipments with multi-panels.

Research Topics

- Modeling and implementing various system models and effects (multi-panel, user rotation) that are relevant for multi-panel user equipment in high carrier frequencies.
- Investigating the deficiencies of the state-of-the art mobility solutions when applied for multi-panel user equipment.
- Developing and implementing new concepts for user mobility fulfilling the requirements set for future 5G networks.
- Investigating the potential of machine learning in improving the mobility performance for multi-panel user equipments.
- Analyzing the performance of the developed solutions by means of simulative investigations.

Qualification and Skills

- Diplom or Master Degree in Communication Engineering, Electrical Engineering or related field, with a grade that is less or equal to 1,7.
- General knowledge in mobile networks.
- Highly proficient in spoken and written English.
- Very good Matlab programming skills.
- Ability to conduct independent research while also collaborating with the team.
- Enthusiastic about developing breakthrough innovations and cutting-edge research.

Application

- Please send to: ahmad.awada@nokia-bell-labs.com
- Application shall include
 - Cover letter.
 - CV.
 - Bachelor and master (or Diplom) degrees (if available).
 - Academic transcript of courses and grades.
 - Any other related documents such as training or job certificates, reference letter, etc.
- Deadline: 1st of September 2020.
- More information about Bell Labs is available at www.bell-labs.com.