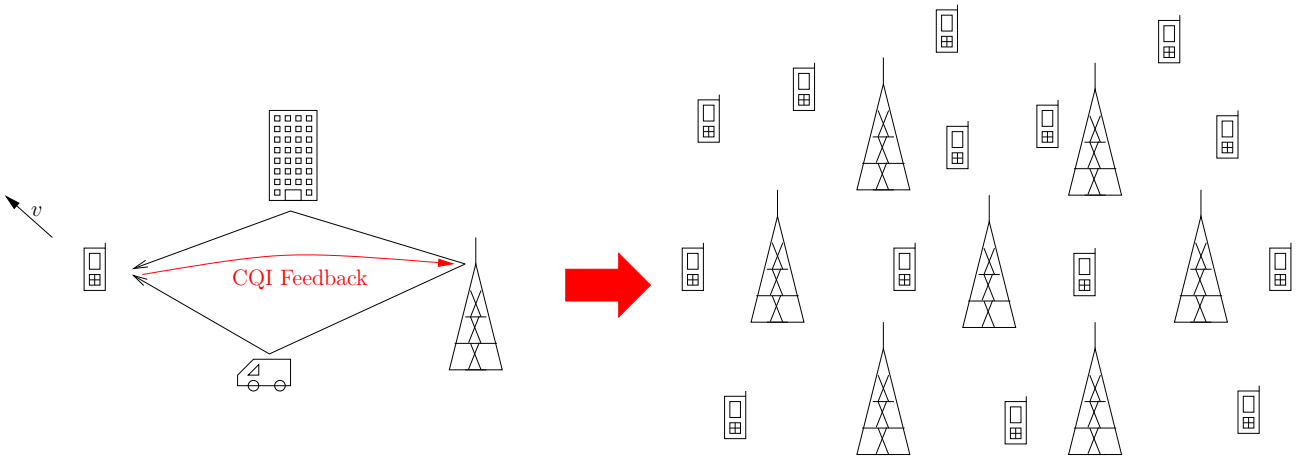
Bachelor/Master Thesis

Link to System Mapping in LTE Systems

Research field
Wireless communication, modeling

Key words
Channel state information, channel quality indicator, LTE, simulation

Description
Researches in wireless communications can be roughly classified into two levels, namely, link level and system level. Link level models focus on investigating the radio link between transmitters and receivers, while the system level models generally cover networks with multiple basestations or users. Since a wireless network is composed by multiple radio links, link level behaviors are also important in system level. In the 4G LTE (Long Term Evolution) systems, the user equipments measure the link quality and map the channel state information (CSI) into the channel quality indicator (CQI). Thus, how to reasonably generate the channel quality indicator is a crucial issue for connecting link level models and system level models.



Link to system mapping through CQI feedback

Goal
To extract link level parameters, a link level simulator shall be built. A link to system mapping scheme shall be developed and optimized. The mapping scheme shall be evaluated by system level testings.

Requirements

- Basic knowledge of wireless communication systems
- Programming skills (Matlab or C++)

Contact

- Xiang Xu, raum: 24 C 409, tel.: 0241 80 27710, E-Mail: xu@ti.rwth-aachen.de