Energy efficient scheduling algorithms for ultra dense 5G mobile networks

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Institution: Huawei Technologies Oy (Finland ) Ltd

Application deadline: 31st May 2016

Description: The ESR investigates energy efficient transceiver architectures and designs enabling low-energy operations for both the uplink and the downlink. Particular attention is paid to energy efficient scheduling, which allocates resources in order to maximize the sleeping time for both mobile terminal and BSs and also to minimize the power consumption with an adaptive DRX/DTX fulfilling the Quality of Service (QoS) requirements.

Responsibilities:

• Developing functionalities, procedures and algorithms improving the energy efficiency in 5G system
• Studying energy consumption models for 5G user node and access node
• Implementation of energy consumption models for the 5G system simulator (user node and/or access node)
• Running 5G system simulations, analyzing and presenting the results
• Close co-operation with RF-IC team in the area of 5G terminal RF-IC energy modeling
• Close co-operation with 5G team in the area of 5G specification

Mobility Schedule:

The candidate will be mainly hosted at Huawei Technologies in Finland (HWFI). After 20 months, the candidate is also expected to be hosted for a 10 month secondment at CTTC and be supervised by Dr. Paolo Dini. During this stay the candidate will study optimization techniques to be used in the design of the scheduling algorithms and their future implementation.

Requirements of the candidate:

• At the time of recruitment, the applicant must not have lived in Finland for more than 12 months in the previous 36 months
• A Master degree in Telecommunications, Computer Science or equivalent
• Once selected by the SCAVENGE consortium for the ESR positions, the applicant must apply for PhD studentship at Tampere University of Technology (TUT).
• Knowledge on mobile networks, basics knowledge of LTE architecture and procedures, basics knowledge of terminal RF architecture
• Ability and motivation to conduct high-quality research, including publishing the results in relevant venues
• Strong programming skills (e.g. Matlab, C/C++, Java, Python).
• Working experience in the areas of Mobile Networks and Sensor Networks is an advantage.
• Knowledge on mobile system simulations and optimization theory is an advantage.
• Very good communication skills in oral and written English.
• Open-mindedness, strong integration skills and team spirit

Further information and on-line application:

http://www.scavenge.eu/