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## Ph.D. position - Thesis offer (M/F)

(Reference: CS\_NN\_PHD2\_H2020\_052017)

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<b>Research topics</b>	<b>Radio Resource Allocation and Management in Heterogeneous 5G RAN</b>
<b>Department</b>	Communication Systems Department
<b>Issue date</b>	1 <sup>st</sup> of June 2017
<b>Start date</b>	3rd quarter 2017 (1 <sup>st</sup> of September 2017)
<b>Duration</b>	Duration of the thesis
<b>Description</b>	<p>A Ph.D. position is available in the Communication Systems Department at EURECOM. The successful candidate will conduct both academic and experimental research toward the future low-latency and reliable wireless 5G communication system with a particular focus on the <b>radio resource allocation and management algorithms and policies</b>. Three network categories (aka Slice) with different QoS requirements will be considered, namely xMBB, uRLLC, mMTC, to develop <b>scheduling, resource allocation/sharing, and channel access algorithm</b>. The latest release of <b>evolved LTE</b> provides a natural extension with some new feature such as <b>NB-IoT</b>, which will be used as the starting point to conduct research and development toward 5G system. In addition, the problem of beamforming, radio resource allocation and management will be considered for the <b>5G New radio</b> (frequency above 6GHz).</p> <p>We will be prototyping and validating the envisioned system architecture and designed algorithm on both in Matlab simulator and in the OpenAirInterface platform in terms of different radio technologies, e.g., NB-IoT, eLTE, and NR over different centralized/cloud RAN deployments based on 3GPP 3-tier architecture (i.e. remote radio unit (RRU), distributed unit (DU), and centralized unit (CU)). The successful candidate will work closely together with research engineers and PhD students, in developing/improving strategies for 5G/LTE network performance optimization.</p> <p>The work will be carried out in the framework of the two 5GPPP European projects. Both project aim at building a flexible and automated network for 5G systems for different type of deployment (centralized and distributed), and its consortium comprises strong industrial partners as well as a number of world-class universities. It is funded by the European Commission under the H2020 Framework Programme. The candidate will actively participate to the progress of the projects.</p>
<b>Requirements</b>	<p>Education Level / Degree:      <b>Master degree</b></p> <p>Field / specialty:                <b>Computer science, electrical engineering, telecommunications, or applied mathematics</b></p> <p>Technologies:                    <b>A very good background current technology landscape 5G, LTE (Rel 10-14), New Radio, NB-IoT Knowledge of radio resource allocation and management, beamforming algorithm.</b></p>

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EURECOM specifically encourages women to apply with a view towards increasing the proportion of female researchers.



Language / Systems: **Past experience in Matlab, C and python programming  
Very good knowledge in Linux OS**

Other skills / specialties: **Good analytical and performance analysis skills,**

Other important elements: **Strong communication skills and keen to operate in a multidisciplinary team**

**Demonstrate an excellent level of spoken and written English.**

#### **Application**

The application must include (I, II and III):

- A curriculum vitae, with full contact information, education, positions and academic work.
- A cover letter explaining the candidate's background (relevant publications), qualifications and research interests.
- Copies of relevant diplomas / degree certificates, transcripts of records, copies 2-3 recommendation letters.

**Applications should be submitted by e-mail to [navid.nikaein@eurecom.fr](mailto:navid.nikaein@eurecom.fr), with the reference: CS\_NN\_PHD2\_H2020\_052017**

**Postal address** CS 50193 - 06904 Sophia Antipolis, France

**Contact** [secretariat@eurecom.fr](mailto:secretariat@eurecom.fr)

**Fax number** +33 4 93 00 82 00

*EURECOM is a French graduate school and a research center in digital sciences based in the international science park of Sophia Antipolis, which brings together renowned universities such as Télécom ParisTech, Aalto University (Helsinki), Politecnico di Torino, Technische Universität München (TUM), Norwegian University of Science and Technology (NTNU), Chalmers University (Sweden) and Czech Technical University in Prague (CTU). The Principality of Monaco is a new institutional member. The Institut Mines-Télécom is EURECOM's founding member.*

*EURECOM benefits from a strong interaction with the industry through its specific administrative structure: Economic Interest Group (kind of consortium), which brings together international companies such as: Orange, ST Microelectronics, BMW Group Research & Technology, Symantec, Monaco Telecom, SAP, IABG.*

*EURECOM deploys its expertise around three major fields: Digital Security, Data Science and Communication Systems. EURECOM is particularly active in research in its areas of excellence while also training a large number of doctoral candidates. Its contractual research is recognized across Europe and contributes largely to its budget.*

*Thanks to its strong ties set up with the industry, EURECOM was awarded the "Institut Carnot" label jointly with the Institut Telecom right from 2006. The Carnot Label was designed to develop and professionalize cooperative research. It encourages the realization of research projects in public research centers that work together with socioeconomic actors, especially companies.*

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