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Dear Madam/Sir,

My name is Khalid Ahmed. A research engineer at the Broadband and Broadcast Department in Fraunhofer IIS, Erlangen. I started my Masters joining the Communication and Multimedia Engineering (CME) program at Friedrich-Alexander University in Erlangen on October 2014 and defended my dissertation in June 2017.

Deutsche Bahn, as a one of the largest transport company in the world, is carrying on major projects migrating the communication technology between its railway vehicles from GSM to 5G. My work experience at Fraunhofer IIS qualifies me to contribute and enrich the ongoing research on reliable communications at DB. I have been working at Fraunhofer IIS on several projects in the field of LTE/NR protocol stack development since May 2016. First I had an internship developing using C programming language on Open Air Interface (OAI) simulation environment to implement shorter Transmission Time Interval (TTI) feature for LTE release 15. OAI is an open source software and hardware development of 3GPP cellular networks. During the internship, I learned a lot about the LTE protocol stack specially the physical layer and enhanced my skills in open source software development.

Then I did my master thesis, titled ""Uplink grant free transmission for reliable communications". Our focus was to test new uplink multiple access schemes such as Grant Free (GF) to reduce user-plane latency in Ultra Reliable Low Latency (URLLC) use case. Through the thesis preparation, I acquired the experience to implement a system level simulator which includes several LTE MAC layer functionalities and entities interacting with each other. The simulator was implemented using MATLAB object oriented programming evaluating several Key Parameter Indicators (KPIs) of the LTE cellular network. Then my full time research was implementing sTTI physical layer features for LTE release 15 on OAI real time hardware setup. During this time, I learned about real time data processing and multi-threading. Currently, I am a member of the team implementing physical layer uplink in the new OAI NR project.

I received my Bachelor degree in communication engineering in Egypt, and my Masters in Germany. This experience makes me flexible and adaptive regarding different work environments and traveling. I am still relatively young (26 years old), ambitious and I learn pretty fast.

Finally, thank you for your time considering my credentials. I am looking forward for your positive feedback.

Yours faithfully,

Ahmed Khalid