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Aalto University
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A modern way of measuring mobile data quality at scale

Title of the dissertation	A hybrid approach to quality measurements in mobile networks
Contents of the dissertation	As opposed to all the new ways we use mobile networks with our smartphones, tablets, watches, or other mobile devices that we carry around, network quality measurements and the way we do it to figure out if a mobile operator is good or not did not progress so much. It still is mostly about comparing what numbers you get out of some speed test runs that we do when we are in doubt whether our troubles are related to a network issue or not. In this dissertation, we show how smartphones enable us to come up with new ways of measuring mobile data quality at scale and while at that measuring what matters for user experience. Modern mobile networks are quite heterogeneous and adaptive in the sense that they follow us around as we move, and they even focus their antennas towards us to provide a better momentary service. Consequently, relying on older ways of measuring network quality does not really reflect how mobile networks perform when it matters for us that is when we are moving around and going about our daily lives. In this work, we present a complete measurement system to achieve a modern and better mobile data quality measurements as well as study what measurable aspects matter most in the way we perceive the quality. We also analyze how users evaluate typical speed test measurements as opposed to how it affects the perceived quality for their daily smartphone usage.
Field of the dissertation	Networking technology
Doctoral candidate	Eren Boz, M.Sc. Born in Turkey, 1988
Time of the defence	28.10.2020 time 12:00
Place of the defence	Via remote technology. The link will be added later at aalto.fi.
Opponent	Professor Jari Porras, LUT University, Finland
Custos	Professor Jukka Manner, Aalto University School of Electrical Engineering, Department of Communications and Networking
Electronic dissertation	http://urn.fi/URN:ISBN:978-952-64-0059-4 *(permanent link to dissertation, if dissertation is already available in electronic form)*
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A doctoral dissertation is a public document and shall be available at Aalto University, School of Electrical Engineering, Maarintie 8, main hall at the latest 10 days prior to public defence.