# Scaling up for 20 billion devices by 2020 and beyond

by

Dr. Suzan Bayhan

TU Berlin, Germany
www.hiit.fi/u/bayhan

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Bogazici University,
Computer Engineering Department, Istanbul

**Abstract**: By 2020, it is estimated that there will be around 20 billion connected devices with different capacities and sizes, functioning in every aspect of human civilization. How does this massive number of devices affect the networking landscape and then how can we meet the wireless data demand? While networking community has been busy seeking answers from all perspectives, in my talk, I will argue that resource sharing is vital for coping with the emerging challenges. More specifically, I will introduce two of my research projects as more concrete examples, namely spectrum sharing in unlicensed bands and content sharing in information-centric networks. While the former---spectrum sharing, requires coexistence protocols among the sharing networks, the latter requires the content-sharing entities to be able to find the content conveniently in the network. I will overview how my research addresses these challenges. In the last part of my talk, I will present what other possibilities I consider as promising to cope with “20 billion devices by 2020” and beyond.

**Bio**: Suzan Bayhan received her PhD degree in computer engineering in 2012 from Bogazici University, Istanbul. Between 2012-2016, she was a postdoctoral researcher at the University of Helsinki. Currently, she is a senior researcher at TKN, TU Berlin and also a Docent in computer science at the University of Helsinki. She received the Google Anita Borg EMEA scholarship in 2009 and co-authored the best paper at ACM ICN 2015. Suzan is on N2Women Board as one of the mentoring co-chairs. Her current research interests include resource allocation in wireless networks, coexistence in the unlicensed spectrum, information-centric networks, and edge/fog communications.