

**Roommates An Unsupervised  
Indoor Peer Discovery Approach  
for LTE D2D Communications**

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# ABSTRACT

- In this paper, we propose ROOMMATEs, a novel approach for indoor peer discovery process, which is the enabler for indoor D2D communications in LTE networks.
- It is a centralized approach utilizing, but not limited to, the ubiquitous WiFi network/femtocell network, combining with eNodeB in order to deliver the best results.
- ROOMMATEs is an unsupervised, yet energy efficient algorithm that can find surrounding User Equipment while minimizing interference and consuming much less energy.

# EXISTING SYSTEM

- Recently, there has been an increasing interest in offloading the 3GPP LTE data by using Device-to-Device communications between devices.
- However, the peer discovering is challenging, especially in the indoor environment, since traditionally, users use cellular signal to find peers, leading to incurring interference to other cellular users.
- The communication channel defined in ProSe is D2D communication, which requires the colocation information of UEs.

# PROPOSED SYSTEM

- The framework is vital for ProSe services as well as LTE-Direct as it provides a list of available UEs and their co-location information.
- Roommates's efficiency is compared to other state-of-the-art approaches in both the field of indoor localization, and power control in wireless networks.
- In a promotion or advertising applications, stores could send coupons to shoppers if the shoppers are close by the stores.
- They can even display information about products in the isles where customers are located.

# HARDWARE REQUIREMENTS

- Processor - Intel core i3
- RAM - 2B
- Hard Disk - 20 GB

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# SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

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# REFERENCE

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