

Roofnet

Free Wireless Internet in Cambridge

ESD 342

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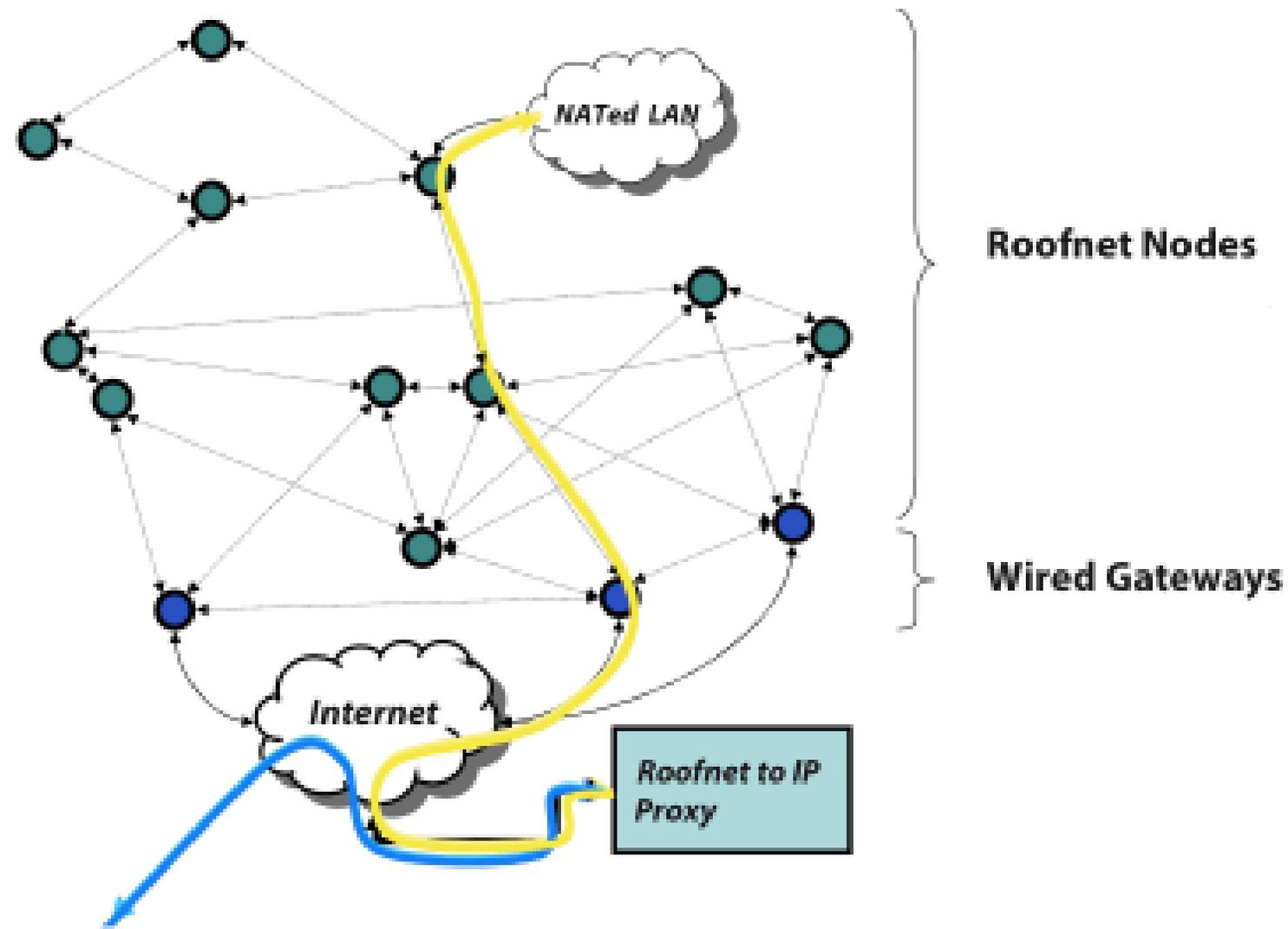
Supervised by: Joel Moses

- Project Background
- Goal of this project
- Data available
- Future steps

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Roofnet Introduction

- The goal of Roofnet project is to provide broadband wireless Internet access to users in Cambridge.
- RoofNet is using mesh technology being developed by MIT. It allows for a town-wide wireless network.





Goals of this project

- Study dynamic architecture
 - Links and nodes appear and disappear
- Study the -ilities
 - Robustness
 - Flexibility
- Improve performance at the edge:
 - Peripheral nodes often have poor service
 - Where to add a node to improve quality?

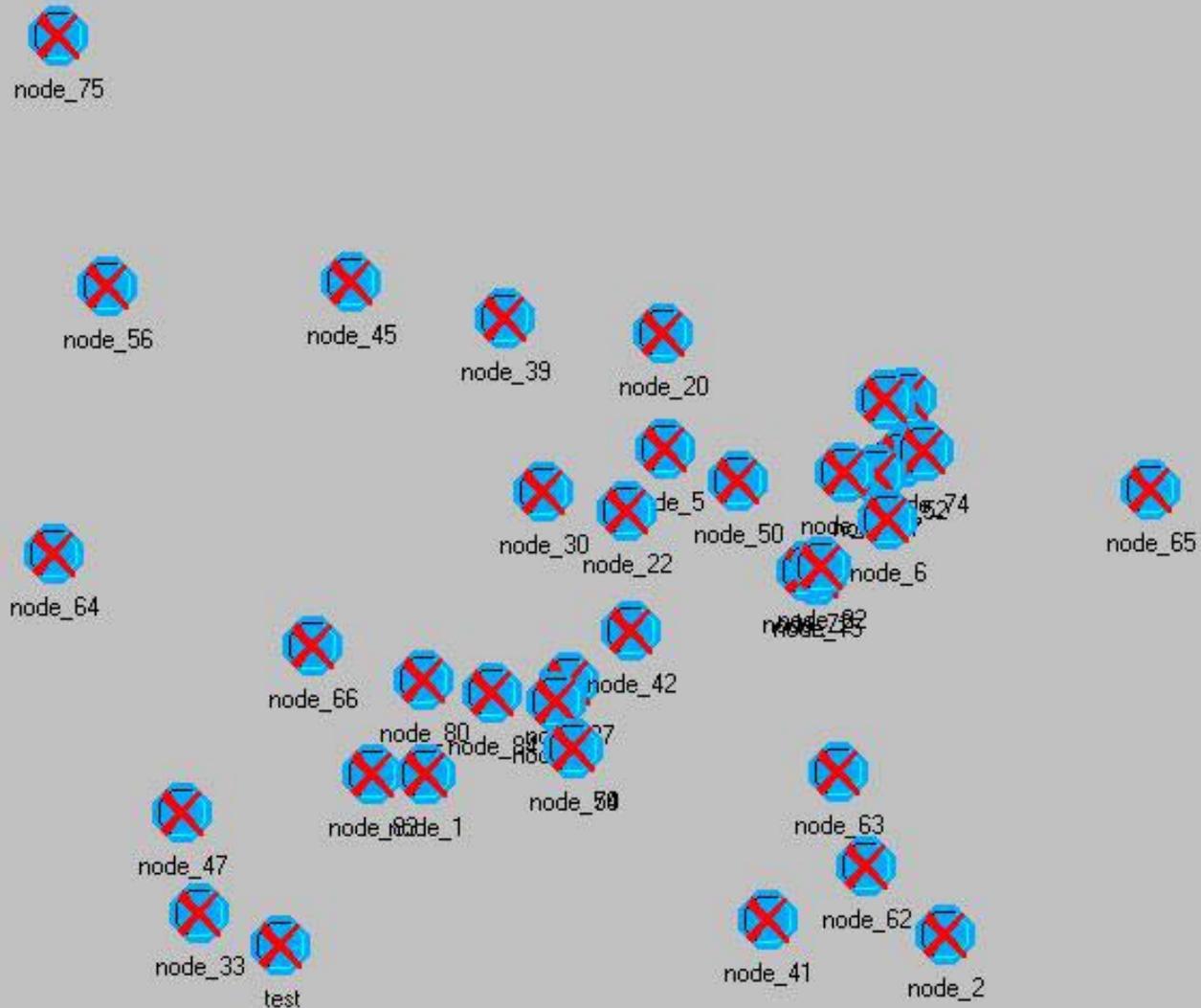
Data available

- From SIGCOMM2004 paper
 - Node coordinates, addresses
 - Traffic data for some period of time
- May be able to get other data
- Software:
 - OPNET Modeler (performance, network simulation)
 - Matlab (topological network analysis)

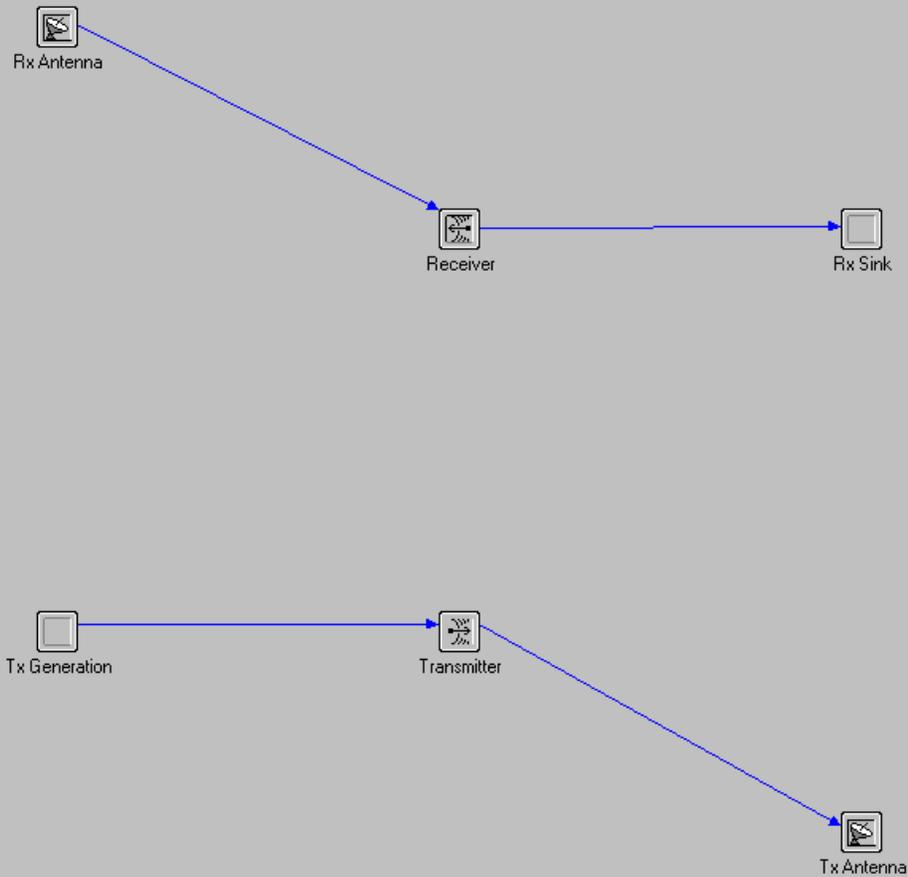
Roofnet Map 2004



Roofnet \rightarrow OPNET mapping



Example Node Representation in OPNET



Future steps

- Data acquisition and implementation
 - Traffic statistics (in progress)
 - Wireless node and antenna models
- Parameters identification
- Network analysis