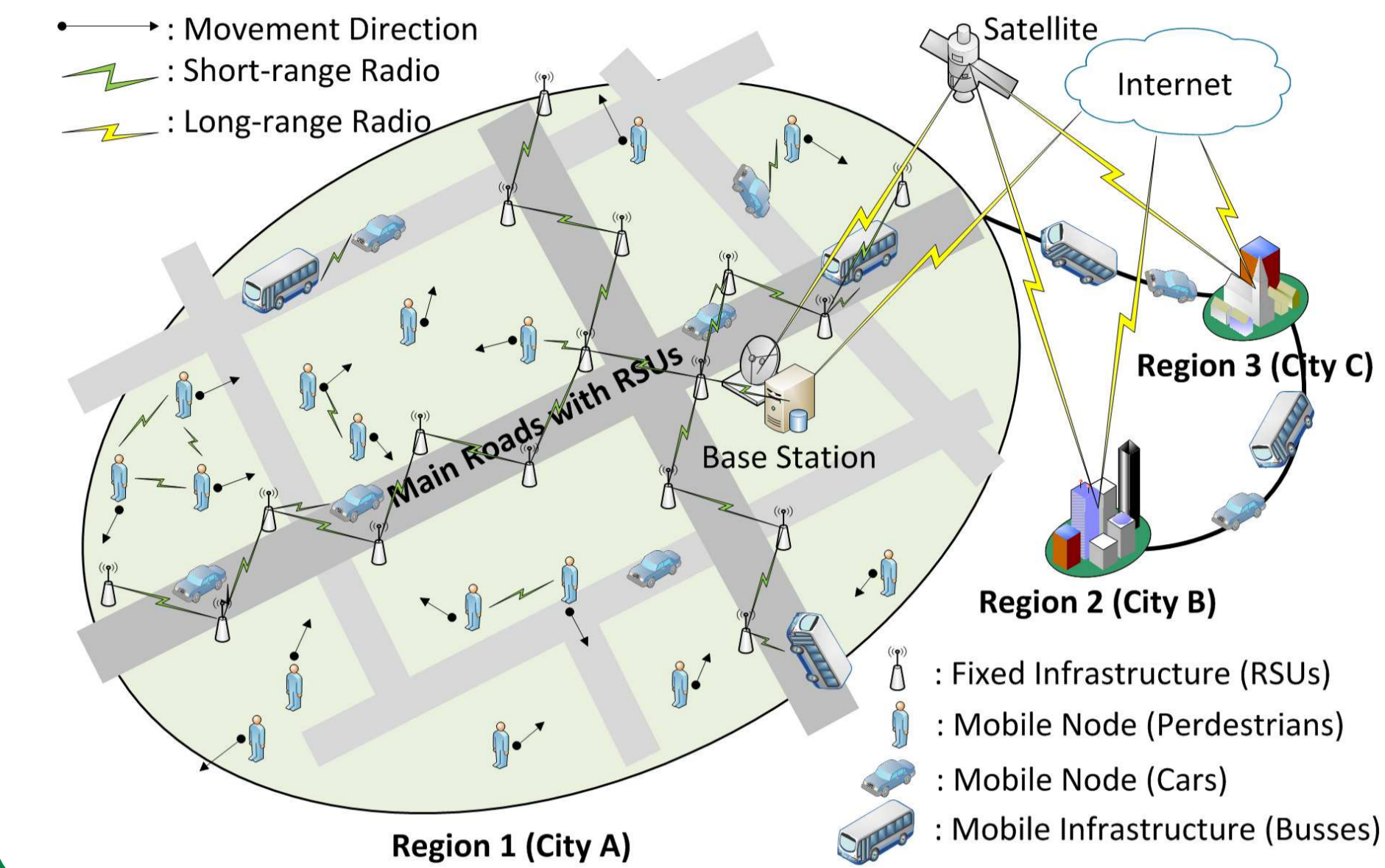


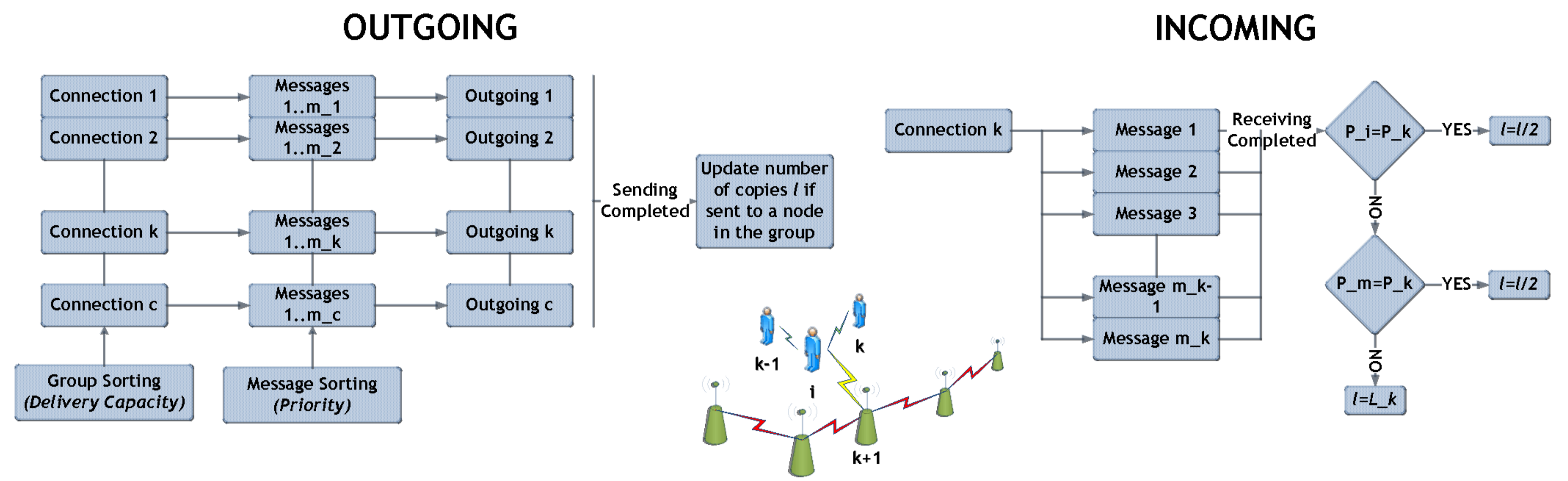
Introduction

DISTRIBUTED DATA PROCESSING and DISSEMINATION in *opportunistic mobile phone sensor networks*.



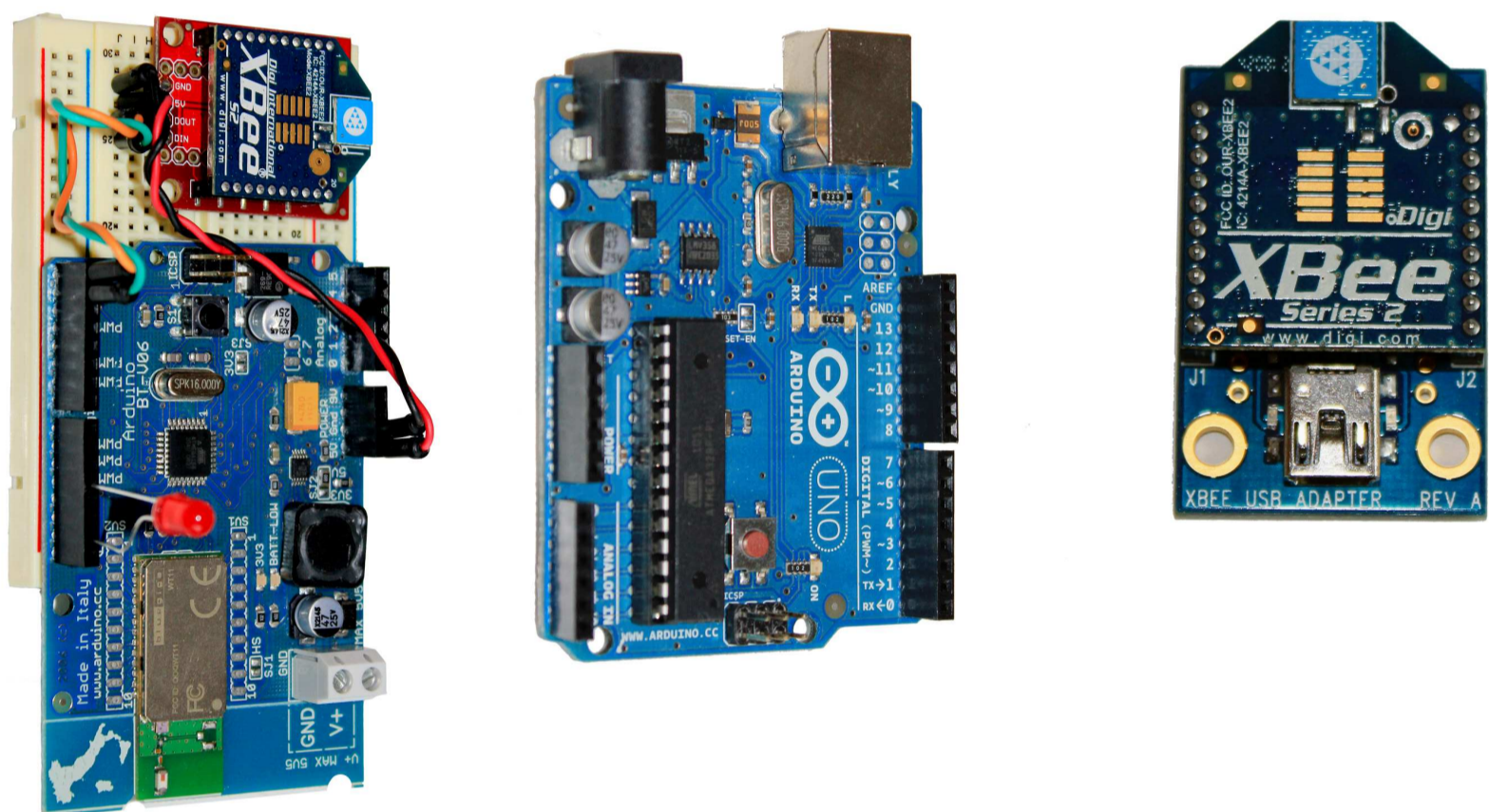
Unified Routing for Data Dissemination

In our previous work [1], we learnt that current DTN routing algorithms [2][3][4][5] perform poorly on opportunistic networks. We propose **UNIFIED**, a **lightweight**, **scalable**, and **efficient** routing.



Objectives

- Network Protocols
- Distributed Data Processing



Setup

Random Shortest Path Map Based Movement with **LAMPPOSTS**, **busses**, **cars**, and **PEDESTRIANS** in the map of **Enschede** city.



Acknowledgements

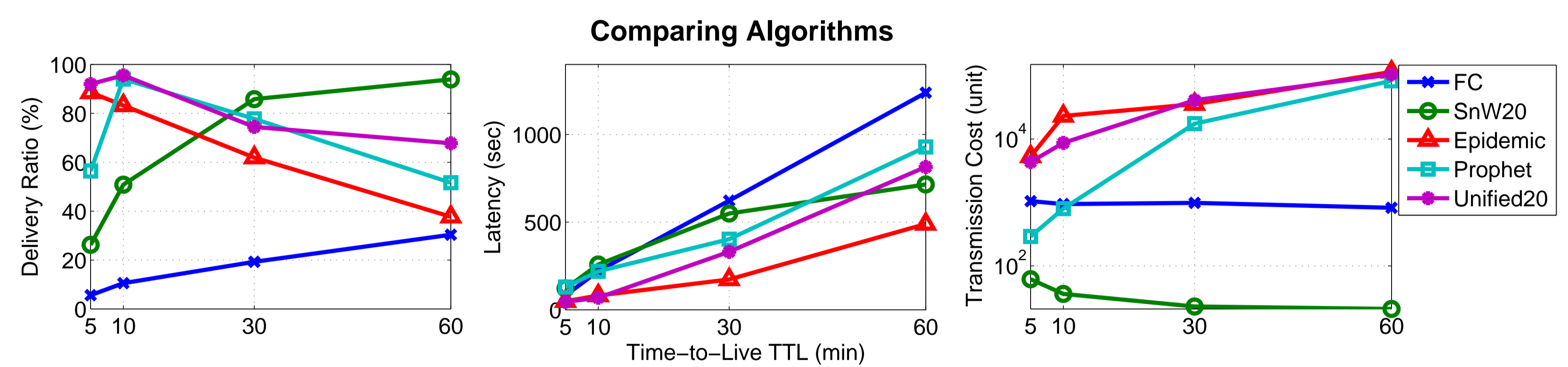
This work is supported by the SenSafety project in the Dutch Commit program. I would like to thank Hans Scholten and Paul Havinga of the Pervasive Systems Group of University of Twente for their supervision.

References

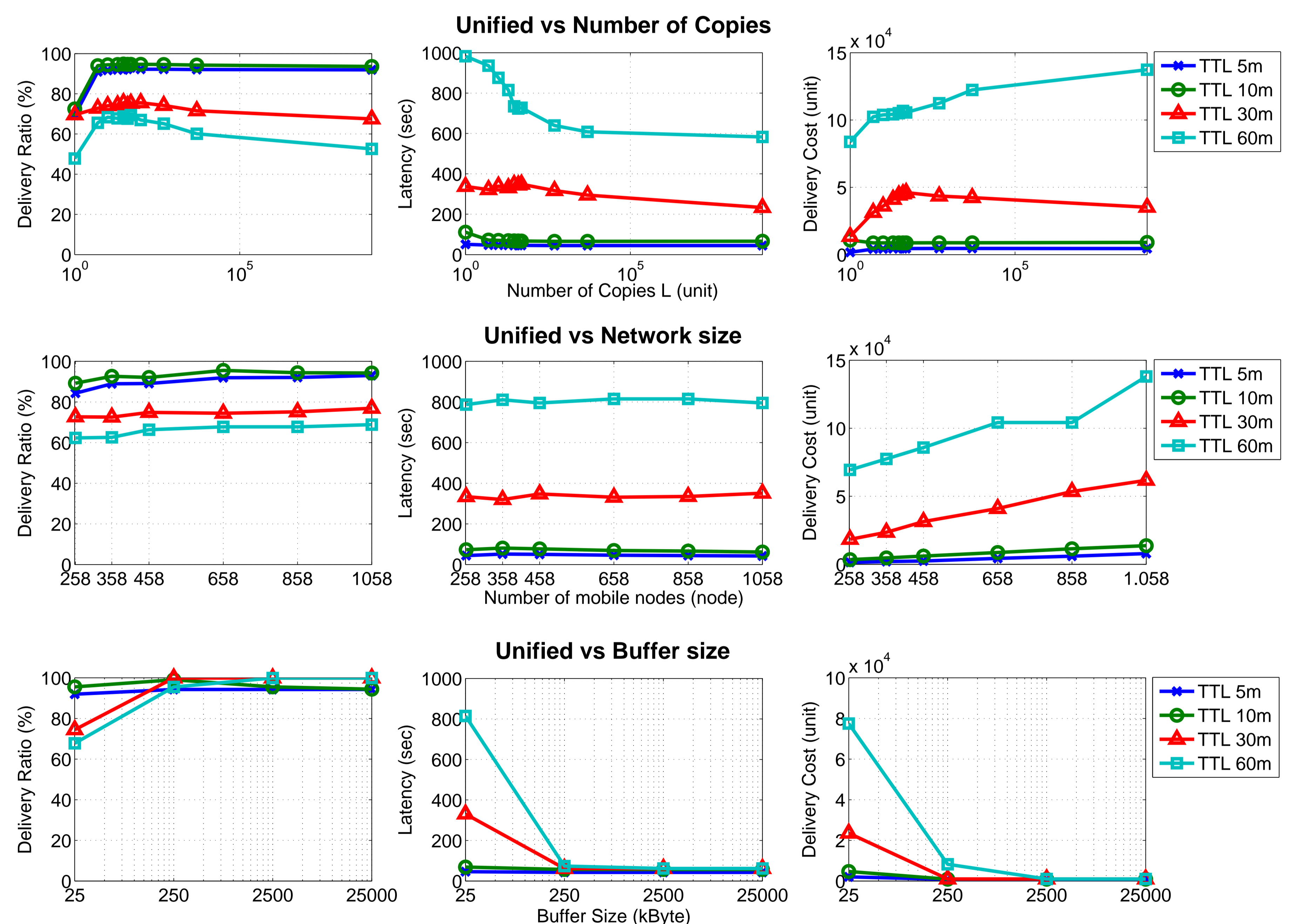
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- [2] A. Lindgren and A. Droia: *Probabilistic routing protocol for intermittently connected networks*, Internet Draft draft-lindgren-dtnrg-prophet-09, 2011.
- [3] T. Spyropoulos, K. Psounis, and C. Raghavendra: *Single-copy routing in intermittently connected mobile networks*, Sensor and Ad Hoc Communications and Networks, 2004.
- [4] T. Spyropoulos, K. Psounis, and C. Raghavendra: *Spray and wait: An efficient routing scheme for intermittently connected mobile networks*, ACM SIGCOMM Workshop on Delay-Tolerant Networking, 2005.
- [5] A. Vahdat and D. Becker: *Epidemic routing for partially connected ad hoc networks*, Technical report, Dept. of Computer Science, Duke University, 2000.

Simulation Results

UNIFIED vs. *First Contact (FC)*, *Spray and Wait (SnW)*, *Epidemic*, and *Prophet*



UNIFIED investigation.



Conclusions and Future Work

DATA DISSEMINATION:

- **UNIFIED**
lightweight, scalable, reliable.
- *Combination of Stochastic and Context-based.*
- *Location-based* online learning routing.

DISTRIBUTED DATA PROCESSING base on:

- *Cross Entropy (CE).*
 - *Incremental Learning.*
- for **RARE EVENT DETECTION.**

Experiments on SMART PHONES + ARDUINO + XBEE

