

Working Title

A Hybrid Centralized and Distributed Time Slot  
and Channel Hopping Scheme for 6TiSCH Wireless  
Sensor Networks

By

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**Main Objective**

What is impact of a hybrid of a load-balanced centralized and distributed scheduling schemes on performance of 6TiSCH networks

**Specific Objectives**

Load-Balanced Objective Function for RPL to determine optimal routes

QoS Supervisor to monitor network Conditions and initiate switching between centralized and distributed scheduling

Minimal Idle-listening and Load-Balanced centralized Channel hopping and time slot scheduler

A hybrid of centralized and distributed scheduling schemes that outperforms both centralized and distributed scheduling schemes in 6TiSCH networks used in isolation.

# Plans set for August

Finish algorithm for CSP (pseudo code) Done

Embed algorithm in cooja simulation No

Add simulation experiments to paper No

# Progress Cont'd

- Submitted paper on Load-balanced RPL to a conference
- Revising paper (Towards a Robust and Low-Cost AWS), Accepted by Elsevier Journal of Development Engineering
- Reviewing other simulation tools to compare with Cooja
  - OpenWSN –
  - 6TiSCH Simulator – ***Currently, the selected one***
  - Cooja – the best tool BUT has memory problems
- Reviewing 6TiSCH Simulator
- Reviewing 6TiSCH centralized scheduling schemes

# Other Project tasks

- Ensuring that open-source RSS2 mote firmware communicates with sensd
- Paper on AWS Monitoring ( )
- Compiling report on Gen 2 AWS prototype (On going )
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# Plans

- Modify 6TiSCH Simulator to
  - Make node stationery
  - Show RPL routes
  - Improve data transmission and embed a centralized scheduling entity