



WIRELESS ROUTING LINK REVERSAL SIMULATOR

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User Guide

Introduction

The Link Reversal Simulator is the final product of the 6-week ITI (Information Trust Institute) summer research program at University of Illinois, Urbana-Champaign. Our simulator analyzes and predicts what happens in an ideal wireless sensor network. With features such as mobility and topology control, we believe our simulation tool will benefit the UIUC Wireless Networking Group, which conducts research on various aspects relating to wireless networks.

System Requirements

Operating System

- Microsoft Windows® 2000
- Microsoft Windows® XP
- Microsoft Windows Vista®
- Microsoft Windows® 7
- Mac OS® X 10.4 or later

Internet Browser

- Internet Explorer
- Google Chrome
- Mozilla Firefox
- Apple Safari

Getting Started

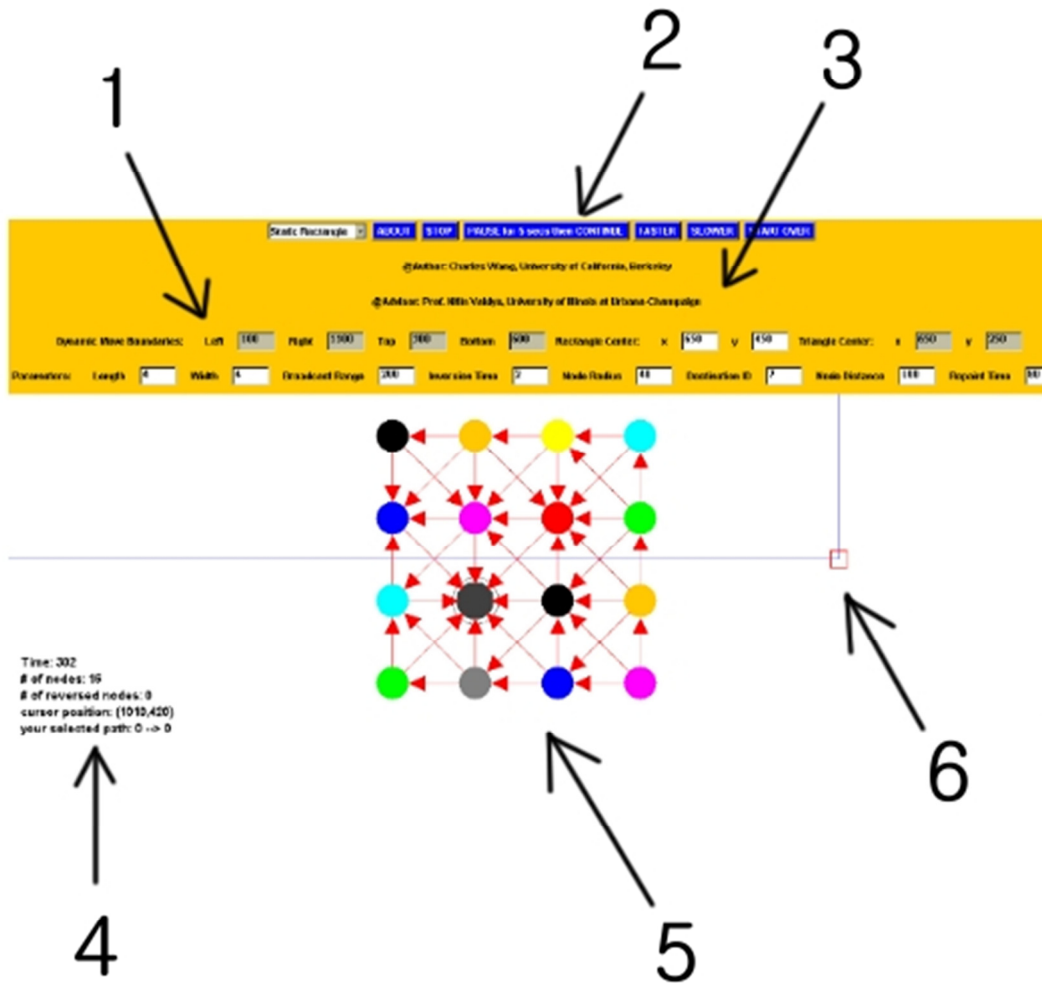
1. Download LinkReversalSimulator.class & LinkReversalSimulator.html.
2. Save the two files in the same directory.
3. Start LinkReversalSimulator.html.

Features

1. User Specified Inputs
2. Dynamic Move Boundary Control
3. Network Topology Control
4. Move Speed Control

5. Mouse Control
6. Random Motion
7. Simple Result Indicator

Description of Parts



1. User Inputs
2. Control Buttons
3. Program Information
4. Result Indicator
5. Network Map
6. Mouse Cursor

Instruction for Use

The simulator is fairly user-friendly yet general. It starts with default input settings as indicated on the screen. Each time a user makes a change to the textual input or clicks the FASTER/SLOWER button, he or she needs to press the START OVER button to observe the adjustment result. Below is a brief summary of control buttons and user inputs.

Control Buttons

- **ABOUT:** program basic information
- **STOP:** terminates the program
- **PAUSE for 5 sec then CONTINUE:** stops the execution of program for 5 seconds
- **FASTER:** makes nodes move faster
- **SLOWER:** makes nodes move slower
- **START OVER:** restarts the program applying user-specified inputs

User Inputs

- **Dynamic Move Boundaries:** boundaries for nodes random movement
- **Rectangle Center:** center of rectangle topology
- **Triangle Center:** top node of triangle topology
- **Length:** length of rectangle or side of triangle
- **Width:** width of rectangle
- **Broadcast Range:** communication range of nodes
- **Inversion Time:** time to reverse links from sinks
- **Node Radius:** radius of nodes
- **Destination ID:** ID number of the destination node
- **Node Distance:** distance of nodes
- **Repaint Time:** time in milliseconds to repaint the applet

Technical Support

For technical questions, please email the author at charleswang007@gmail.com