DTN simulation:
The Opportunistic Networking
Environment (ONE) Simulator
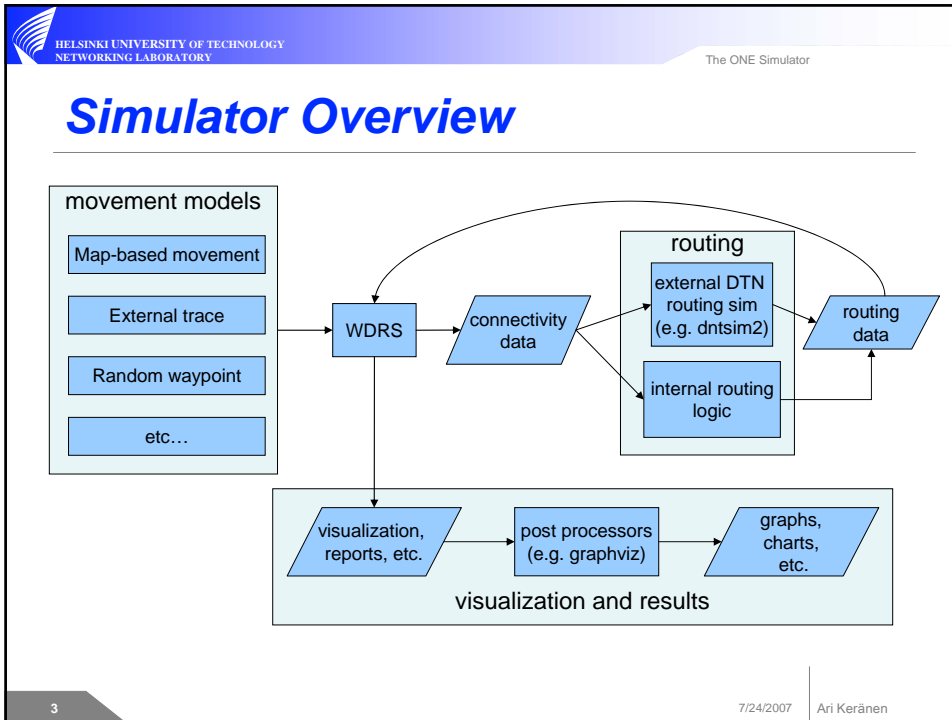
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DTNRG @ IETF 69, 24 July 2007

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The ONE Simulator

- Visualizes the movement of nodes
- Generates connectivity data from mobility model
  - Can generate output e.g. for dtnsim2 and ns-2
- Supports internal and external routing
  - Can read dtnsim2's output of routing decisions
  - Contains implementations of different routing algorithms
- Visualizes message passing in the simulator
  - simulator can be automatically paused on interesting events and uninteresting events can be filtered out
- Generates reports of connections and message passing
  - simple logs of e.g. connection times
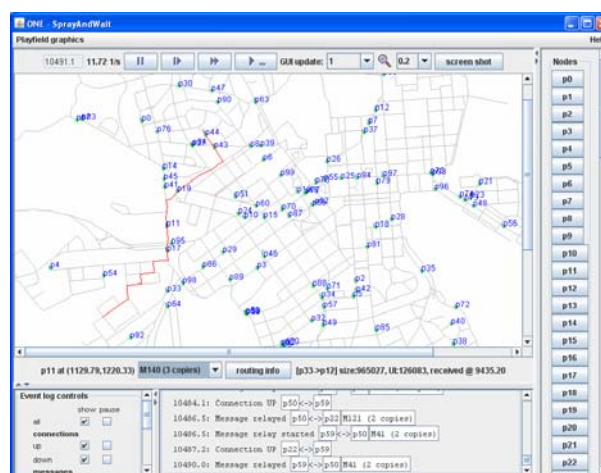 - graphs using Graphviz (adjacency, message paths…)

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Simulator Overview

Components (1)

- Mobility Generation
  - Random Waypoint
  - "Random Helsinki Model" (map-based)
  - "Not-so Random Helsinki Model)"
    - Communities, points of interests, …
  - Node groups
    - Further steps to model behavior and motion
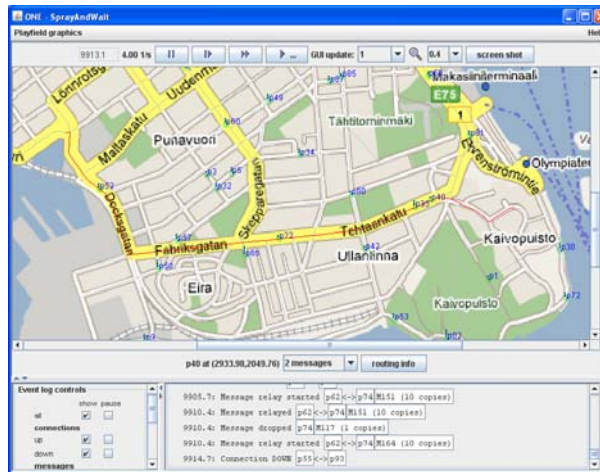 - Interfaces to dtnsim2, ns2, …

Components (2)

- Routing Core
  - Extensible for different routing/queuing schemes
  - Flooding, Epidemic, PRoPHET, Spray & Wait
  - More to come
  - Different mobility feeds
    - "Live feed from the mobility generator"
    - Accepts contact or mobility traces (e.g., CRAWDAD)
- Visualization
  - Interactive real-time visualization
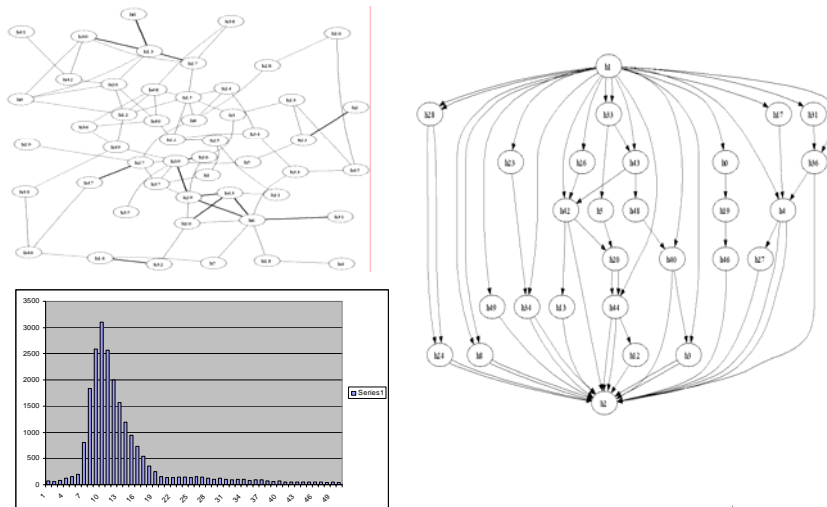 - Various trace files and summary reports
  - Graphing tools

Screenshots

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Screenshots

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Example reports

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The ONE Simulator

ONE Download (GPL)

http://www.netlab.tkk.fi/~jo/dtn/

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