



Net-Centric Software & Systems Consortium Planning Meeting

February 20 - 22, 2008

Self-Configuring Wireless MEMS Network

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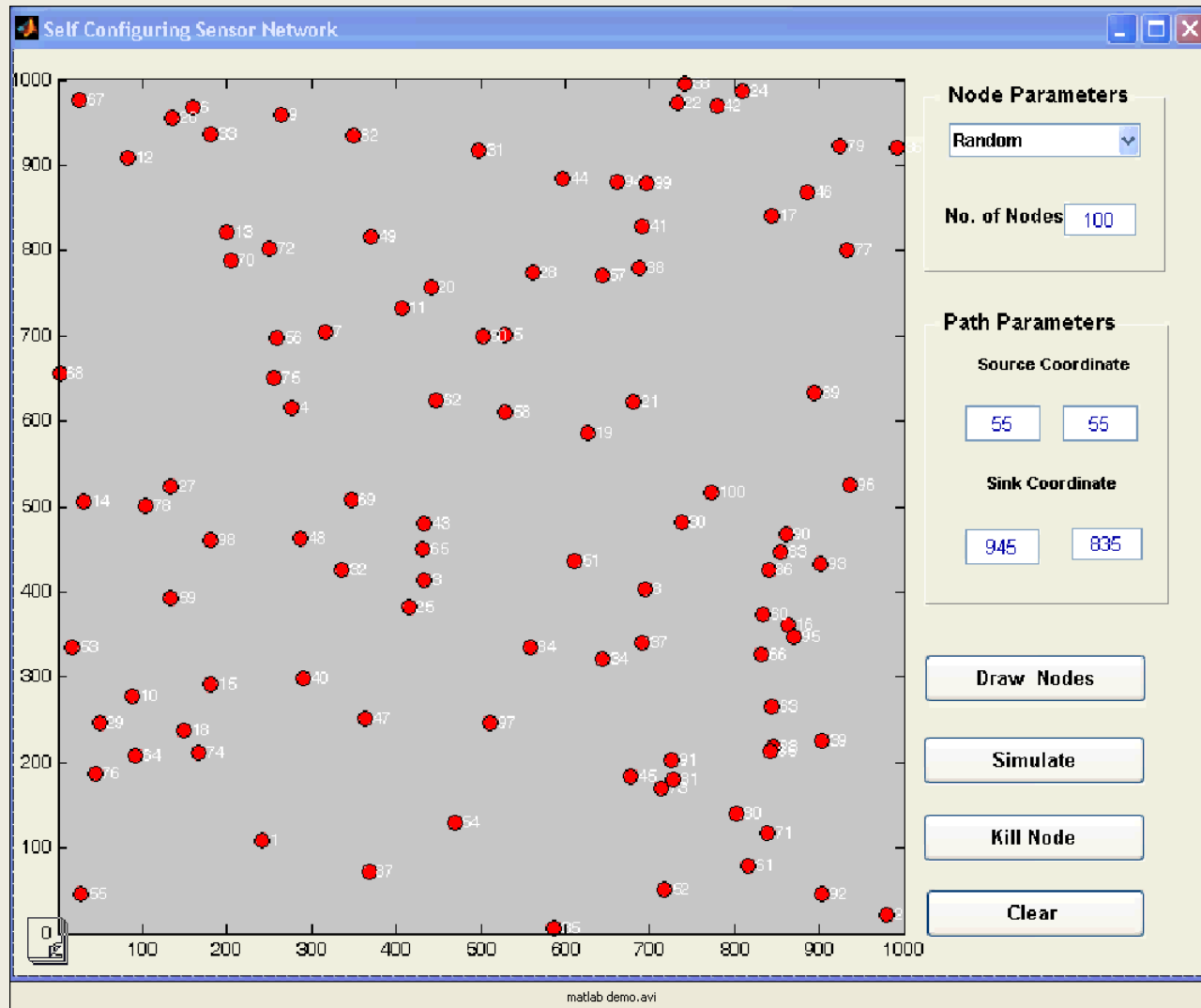
Project Description

- Considerable interest in miniature, lightweight, self-powered wireless sensors.
- Networking software should sense other compatible sensors and establish secure communication.
- Software needs to be small and efficient.
- Network should be adaptable to real-time changes in number of networked devices, changes in environment, hostile EMI, etc., without loss of service.

Our Solution

- Investigate, prototype, and test small networking software package that meets requirements of secure, viable, and adaptable communication assuming all mobile devices.
- Develop report that identifies and describes work, including requirements, designs, tests, and source.
- Provide software demonstration/prototype.

Our Solution



Experimental Plan

- Leverage existing standards and guidelines to apply and scale to new applications.
- Use model-based engineering techniques for requirements and design.
- Use integrated development environments and automated test and test generation tools.

Industry Member Benefits

- Lockheed Martin Aeronautics: sensors can be installed practically any location and left to function without requiring access panels for maintenance.
- Envisioned use includes condition based maintenance and flight-test and consumer instrumentation applications.
- Large cost savings are be achieved in predictive maintenance rather than timed or reactive maintenance.

Deliverables and Budget

Deliverables:

3-months: Interim review of literature search and assessment activities

6-months: Perform incremental review of designs, tests, and prototype code using integrated development environment

9-months: Provide demonstration (actual equipment, prototype, and/or simulation) of network capability to deliver information to requesting system illustrating network re-configurability with nodes dropping out and adding in.

Budget:

- Support 2 graduate students, 2 months for PIs, and 2 travels
- \$93K for 1 year

		Duration	Total
2 graduate students	at \$25,000 stipend + \$10,000 tuition per year	1 year	\$70,000
2 faculty months	at \$10,000 per faculty effort	2 months	\$20,000
Travel	at \$1,500 per conference travel	2	\$3,000
Total Cost		1 year	\$93,000