*Review Form: 1st International Workshop on*
**Services and Infrastructure for the Ubiquitous and Mobile Internet (SIUMI'05)**

# SIUMI 2005

WEB MINDS

Columbus, Ohio, USA, June 6th, 2005

In conjunction with the 25th Int. Conference on Distributed Computing Systems (**ICDCS'05**)

Paper Number: 12
Paper Title: A Fairness Monitoring Service
Authors: Hugo Miranda and Luis Rodrigues

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**Reviewer1:**

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| **Familiarity**<br>Rate your familiarity with the topic | 1 | **2X** | 3 | 4 | |
| | Novice | **Some knowledge** | Familiar | Expert | |
| **Significance**<br>Technical relevance and practicality of ideas in the paper | 1 | **2X** | 3 | | |
| | Not significant | **Somewhat significant** | Highly significant | | |
| **Novelty**<br>How original the problem and/or solution method is | 1 | **2X** | 3 | | |
| | Not novel | **Somewhat novel** | Highly novel | | |
| **Quality of Presentation**<br>Writing and presentation style/accuracy | 1 | **2X** | 3 | | |
| | Poorly written | **Could be improved** | Well written | | |
| **Overall Recommendation** | 1 | 2 | **3X** | 4 | 5 |
| | Strong reject | Weak reject | **Weak accept** | Accept | Strong accept |

## Contributions

The paper proposes a fairness monitoring service that can be used in ad hoc wireless network. The goal of the service is to measure the number of messages forwarded by each node in order to check some selfish behaviors. Authors show how their proposal can be used by the DSR approach and present a simulation study (performed with ns2) that compares DSR with the enhanced DSR.

## Strengths and weaknesses

The paper organization is questionable. Readers may get confused.
The two fundamental introduced metrics are not clearly described. The first metric (average estimation) uses a parameter that is not clear how it is computed. The second metric (congestion estimation) is computed with an equation that is absolutely not clear (what's the reason of the number 8 in equation 4?).
The interesting point is the application of the introduced monitoring service. Authors use is to enhance the DSR mechanism. A simulation study is presented to show the benefits of the proposed mechanism. Although the simulation is interesting, I think it is very important to investigate the drawbacks of the proposed mechanism (battery usage and memory used to keep track of all the exchanged messages).

## Detailed public comments

Organization:
The paper is not well organized. Authors present a short introduction, followed by a “motivation” section. Then a DSR Overview subsection is introduced but inside this section, a subsection (2.3) is used to describe the paper contribution. The following section (3) is used to describe some related work and finally section 4 presents the paper contribution. Up to section 3, the paper is too verbose, and it should be shortened. Readers get confused with such organization. I would move the DSR overview to the related work section and put everything else inside the introduction section. In this way the introduction would be clearer.
Section 4 should be extended in order to provide a better description of the proposed mechanism. For instance, although pkts(i) (the number of packets forwarded by other nodes) is a fundamental parameter, it is not clear to me how it is computed.
Further, authors introduce at the beginning of section 4.3 the metric that evaluates the congestion region. No explanation is given about the meaning of “congestion region”. Only later authors explain the meaning.

Technical
Although pkts(i) (the number of packets forwarded by other nodes) is a fundamental parameter, it is not clear to me how it is computed. Is it computed listening to all the messages? Is there a communication with neighbors nodes?

Also the second introduced metric is not clear. Equation 4 should be better described (what’s the reason of the number 8 in the equation?).

The mechanism evaluation is done through a study comparison with DSR and the enhanced DSR. Although interesting, this study should include a comparison of battery usage and of the memory used to keep track of all the exchanged messages in the area. Previously, authors say that “it is expected that the overhead….small computational power”. An investigation should be done.

Language:
A grammar check is needed as well as a spelling check.

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## Reviewer2:

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|---|---|---|---|---|---|
| **Familiarity**<br>Rate your familiarity with the topic | 1 | 2 | ***3X*** | 4 | |
| | Novice | Some knowledge | Familiar | Expert | |
| **Significance**<br>Technical relevance and practicality of ideas in the paper | 1 | ***2X*** | 3 | | |
| | Not significant | Somewhat significant | Highly significant | | |
| **Novelty**<br>How original the problem and/or solution method is | 1 | ***2X*** | 3 | | |
| | Not novel | Somewhat novel | Highly novel | | |
| **Quality of Presentation**<br>Writing and presentation style/accuracy | 1 | ***2X*** | 3 | | |
| | Poorly written | Could be improved | Well written | | |
| **Overall Recommendation** | 1 | 2 | ***3X*** | 4 | 5 |
| | Strong reject | Weak reject | Weak accept | Accept | Strong accept |

## Contributions

The paper presents a fairness monitoring service which aims to promote a balanced use of nodes in the Dynamic Source Routing protocol used in mobile ad hoc networks by mitigating route concentration. The proposed monitoring service uses information that is extracted from packets snooped from the network. The monitoring service is applied to a proposed extension of the DSR routing protocol.
The paper addresses the load balancing issue in a well-known routing protocol for MANET; this issue is typically under evaluated in favor of efficiency. On the other hand, its consideration is important because it affects the node willing to cooperate in an open MANET.

## Strengths and weaknesses

Apart from some typos and grammar errors, the paper is readable and presents clearly the paper motivation and contributions.
The main weakness of the paper regards the simulation experiments and in particular the simulation setup whose parameters are not clearly motivated.

## Detailed public comments

The main problem of the paper regards the simulation experiments. The authors use a fixed simulation setup (whose parameters are summarized in Table 1) and do not provide any motivation for the chosen values. A sensitivity analysis to some of these parameters would strengthen the paper.
Furthermore, the authors should provide more details regarding the simulation model and experiments in such a way to provide more confidence on the results. Many details about how the simulation experiments were conducted are left over. For example, do the authors consider a simulation warmup? How long is it? How many times each simulation was run with different random seeds?

The authors should also discuss how the proposed monitoring service affects the network throughput.

A reference for the random waypoint model should be added (for example the paper by Broch et al. in Proc. of ACM Mobicom 1998).

The paper title should be more specific, for example using terms such a mobile ad-hoc networks and routing protocol.

There are some typos and error grammars that need to be fixed, for example bellow instead of below and missing plurals throughout the paper.