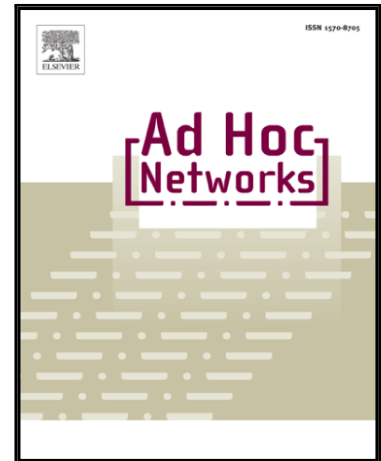


Accepted Manuscript

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PII: S1570-8705(16)30310-9
DOI: [10.1016/j.adhoc.2016.11.008](https://doi.org/10.1016/j.adhoc.2016.11.008)
Reference: ADHOC 1489



To appear in: *Ad Hoc Networks*

Received date: 10 May 2016
Revised date: 16 November 2016
Accepted date: 17 November 2016

Please cite this article as: Emmanouil Panaousis, Eirini Karapistoli, Hadeer Elsemary, Tansu Alpcan, MHR Khuzani, Anastasios A. Economides, Game Theoretic Path Selection to Support Security in Device-to-Device Communications, *Ad Hoc Networks* (2016), doi: [10.1016/j.adhoc.2016.11.008](https://doi.org/10.1016/j.adhoc.2016.11.008)

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Game Theoretic Path Selection to Support Security in Device-to-Device Communications

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Abstract

Device-to-Device (D2D) communication is expected to be a key feature supported by 5G networks, especially due to the proliferation of Mobile Edge Computing (MEC), which has a prominent role in reducing network stress by shifting computational tasks from the Internet to the mobile edge. Apart from being part of MEC, D2D can extend cellular coverage allowing users to communicate directly when telecommunication infrastructure is highly congested or absent. This significant departure from the typical cellular paradigm imposes the need for decentralised network routing protocols. Moreover, enhanced capabilities of mobile devices and D2D networking will likely result in proliferation of new malware types and epidemics. Although the literature is rich in terms of D2D routing protocols that enhance quality-of-service and energy consumption, they provide only basic security support, e.g., in the form of encryption. Routing decisions can, however, contribute to collaborative detection of mobile malware by leveraging different kinds of anti-malware soft-

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