Dipartimento di Scienze Economiche, Matematiche e Statistiche

Università degli Studi di Foggia

Energy Saving in Link Stability Routing Protocol

Crescenzio Gallo, Michele Perilli e Michelangelo De Bonis

Quaderno n. 01/2011

"Esemplare fuori commercio per il deposito legale agli effetti della legge 15 aprile 2004 n. 106"
Quaderno riprodotto dal Dipartimento di Scienze Economiche, Matematiche e Statistiche
nel mese di marzo 2011 e depositato ai sensi di legge.

Energy Saving in Link Stability Routing Protocol

Crescenzio Gallo, Michele Perilli, Michelangelo De Bonis

IEEE Members

[*c.gallo, m.perilli, m.debonis*]*@ieee.org*

Dipartimento di Scienze Economiche, Matematiche e Statistiche

Università di Foggia

Largo Papa Giovanni Paolo II n.1, 71121 Foggia, Italy

Phone +39 0881-753708 Fax +39 0881-753709

Abstract

Because the CPU is a very expensive resource in mobile ad hoc networks (MANETs), it is very important to consider the overhead introduced in a routing protocol. Many theories have been hypothesized with the aim of minimizing it. But how much is the energy consumption from a network node's battery induced by the routing protocol overhead? In a previous work we dealt with a routing protocol based on link stability (link duration observed in a time interval). In this work we attempt to hypothesize a model for conserving the battery energy consumed by nodes in a MANET adopting the link stability routing protocol.

Keywords: mobile ad hoc network, routing protocol, energy consumption.

ACM Taxonomy: 3.II.VIII.I, 3.II.II.IV, 2.X.II.
MSC 2000: 68M10, 90B18.