



## High survival routing for wireless networks



*Increasing route survival probability (RSP) will improve throughput and efficiency of the network*

**Researchers at the University of Edinburgh have developed a metric for wireless communication networks that measures a nodes capability to transmit data (ie. relay capacity) and a new routing mechanism. This technology increases route survival probability, improving throughput and efficiency of the network, increasing the energy efficiency, prolonging battery lifetime, and improving overall quality of service.**

A wireless ad hoc network is a computer network in which “nodes”, the means to exchange and route data, are spread across a geographical area and the communications are wireless. To develop robust wireless communications it is essential that the “nodes” have sufficient capacity to complete the transaction. Often, at least some of the devices in these systems are battery operated, making energy exhaustion an important issue for network stability.

Current routing schemes are based on minimal total transmission power and can not guarantee that the route can survive for the duration of the transfer.

This new metric, “relay capacity”, and routing mechanism, developed at the University of Edinburgh, ensures that the source node finds a route to support the whole transmission task or it divides up the task. Therefore, the commencement of a transfer guarantees that the node elements have sufficient capacity to complete the transaction. This technology increases route survival probability and supports continuous services by providing longer node lifetime.

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### Key Benefits

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- Increased energy efficiency
- Improved quality of service
- Prolongs battery lifetime of devices (eg. computers, mobile phones etc)
- Provides better signal and coverage for wireless networks

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### Applications

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- Multi-media wireless communications eg. next generation mobile phones
- Mobile wireless networks to enable dynamic communication between the emergency services etc
- Development of sensor networks eg.  
(a) intelligent buildings to detect and monitor environmental changes such as smoke and heat sensors  
(b) car park sensors to determine which bays are free etc
- Wireless surveillance eg. to monitor vehicle traffic or to provide security
- Universal mobile Telecommunication service (UMTS) networks

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### Patent Status

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A European and US patent entitled “Node Lifetime Aware Routing in Mobile ad hoc networks” has been filed with priority from 27/01/2004.

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### Commercial Opportunity

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This technology is available to license for all the identified applications including mobile/multi-media communications, sensor networks, and for the development of wireless networks.

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### Further Information

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For further information on this technology transfer opportunity with the University of Edinburgh, please contact:

Claire Brady BSc PhD  
Edinburgh Research and Innovation  
The University of Edinburgh  
1 Roxburgh Street  
Edinburgh EH8 9TA  
Scotland, UK

Telephone: +44(0) 131 651 4280  
Email: [Claire.Brady@ed.ac.uk](mailto:Claire.Brady@ed.ac.uk)