A Distributed *h*-out of-*k* Mutual Exclusion Algorithm for Ad Hoc Mobile Networks

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In this paper, we propose a distributed algorithm for solving the *h*-out of-*k* mutual exclusion problem for ad hoc mobile networks. The *h*-out of-*k* mutual exclusion problem is also known as the *h*-out of-*k* resource allocation problem. It concerns with how to control nodes in a distributed system so that each node can access h resources out of totally k shared resources, $1 \leq h \leq k$, with the constraint that no more than k resources can be accessed concurrently. We have also proved the correctness of the proposed algorithm. The proposed algorithm is sensitive to link forming and link breaking and thus is suitable for ad hoc mobile networks.