

Abstract

This work proposes a new algorithm, called *Extra*, for power saving and *ad hoc* network life time extension. *Extra* is able to save power by allowing each node to decide whether it should be active or to change to the sleeping state, in which the power consumption is significantly lower. The power saving is done between the nodes in order to extend the network life time, that is, extend the period of time consumed until the death of the first node. All used information can be obtained only from the routing level. Besides, *Extra* can be used together with any other *ad hoc* network reactive protocol and it is not necessary to change its features. As it is very simple, it can be used by any kind of hardware, even the most simple and not expensive ones. The simulation tests show that *Extra* is very effective in network power saving compared with other similar mechanisms.

Keywords – *ad hoc* networks, energy conserving, routing protocols, extends the network life time