

Directional routing protocol in wireless mobile ad hoc network

Introduction:

Advancement in wireless communication technology and portable computing devices such as wireless handhelds, Personal Digital Assistants (PDA) and other mobile information terminals have led to a revolutionary change in our information society towards the era of mobile computing. The ubiquitous access to a variety of digital devices and multimedia tools makes it possible to create, analyze, synthesize and communicate knowledge using a rich variety of media forms. Additionally, the mobile devices are getting smaller, cheaper, more convenient, and more powerful and have contributed to the explosive growth of the mobile computing equipment market. Vast interest and concerted work in developing and enhancing wireless and mobile network protocols are being driven by the ever increasing demand for an anytime and anywhere Internet access.

To date, the type of network that have been widely deployed is based on a centralized approach which requires a network point of access, commonly called the Access Point (AP) that act as a gateway for the mobile device to the Internet. Even though these infrastructure-based networks provide the path for mobile devices connectivity, time and potentially high cost are required to set up the necessary infrastructure (Xue & Ganz, 2003). Also due to the limited radio range, the devices must be in the vicinity of an AP in order to be connected. It is important to note that when a natural catastrophe, war, or geographic isolation occurs, communication may break down; thus, unavailability of the network connection (Milanovic et al.,2004). Hence, the provision of required connectivity and network services at this instance becomes a real challenge. With this scenario, ad hoc technology emerges with the aim to solve this problem.