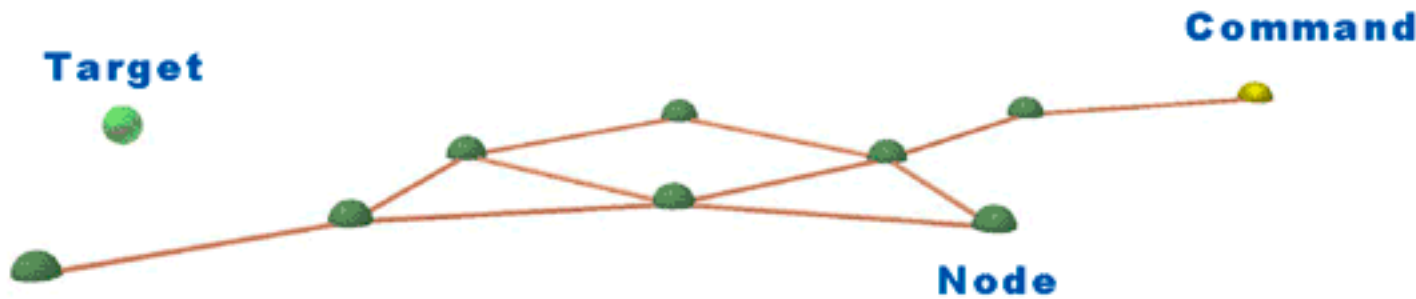


Electronic Prototypes will be expanding its mission for 2007 from a service only company to a service/products company.

# MNS Wireless mesh network example



**Shown here a target is about to enter a PIR mesh network**

Miniature Netted Sensor (MNS) systems are a developing technology for creating disbursed networks – usually wireless. Each node typically consists of a low-power, short-range (typically 50-100 meters) RF transceiver, a processor to handle communications and data payload tasks, a power source, and one or more sensors suited for the mission at hand. The node electronics must be low power to the point where batteries can last a year or more. The node processor, however, must have sufficient capability to run the communications protocol as well as acquire, store, and forward data from the sensor to the user – and perhaps perform limited analysis and algorithms as well. One important feature necessary for all miniature netted sensor systems is the ability to automatically self-configure the network for any and all arrangements of nodes; that is, no care need be taken by the user with regards to node placement except that 1) it suit any requirements of the mission sensors, and 2) that any node in the network be within communications range of at least one other node.

Each node should be easy to use, automatically configuring to the greatest extent possible; should be rugged and capable of surviving all manner of environments both indoor and outdoor, and should be capable of handling a wide variety of sensors. Given that a network can consist of dozens or hundreds of nodes and those nodes could be disposable and/or placed in inaccessible locations, unit cost should be on the order of \$50 or less per node in bulk quantities.

MNS networks have only recently become commercially available. Most miniature network companies advertise their hardware as development kits rather than a ready to use product. Electronic Prototypes, Inc. (EPCO)'s MNS can be considered a ready to use product with little knowledge of electronics necessary. Commercial uses being considered include heavy-machinery installations where dozens or hundreds of locations must be monitored for vibration, temperature, or pressure changes where discrete wiring is impractical. Scientific applications may include environmental and animal monitoring. Military and local government applications include perimeter security, gun shot detection/location, covert surveillance along with search & rescue missions.

EPCO is developing an MNS system designed to be user friendly along with upgradeable hardware and software. EPCO is using readily available COTS (Commercial Off-The-Shelf) hardware and software components to minimize development time. Although EPCO's MNS was initially intended for the military, this design will be ideally suited for commercial and academic applications where low-cost and high-reliability is also critical.



Questions? Need more Information?

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