Wireless Sensor Networks (WSNs) are networks of tiny, autonomous sensor devices spatially distributed and equipped with wireless communication capabilities. The usage of typical WSN range from real-time tracking, monitoring of environmental conditions, monitoring of building and manufacturing plants and smart homes. A typical wireless sensor network is expected to work without human intervention for a long time period.

Applications involving real-time sensing and control require sensing devices which can communicate with high efficiency and robustness. Many of the potential applications can be integrated in cluster tree network architecture. Short range wireless communication is used for intra cluster communication while longer range communication is adopted for inter cluster integration. Tata Consultancy Services (TCS) solution includes power efficient sensor hardware platforms, protocols and an application framework for deploying such sensor networks.
Wireless Sensor Network based Asset Tracking

Wireless Sensor Network based infrastructure can offer an efficient and cost effective solution for many asset tracking / localization applications. In many cases it is sufficient to know the location of the asset in terms of its proximity to a nearest landmark/label. A fixed sensor node, integrated in a network, can act as a location label. It can detect a mobile node in its proximity and send the information to the server application. Moreover, if the mobile node is in the proximity of more than one sensor node then it can enable signal strength based localization giving a better location resolution.
### Applications
- Industrial control & automation
- Asset tracking and monitoring
- Consumer electronics
- RFID networking
- Home automation
- Building and vehicular monitoring
- Patient monitoring & healthcare
- Environmental observations
- Access control

### WSN Offerings
- Customized hardware platforms, antenna, power sources, sensor integration
- Networking protocols and application development
- Network simulation and analysis
- WSN product design services
- Sensor to applications – End to end solutions
About Tata Consultancy Services (TCS)

Tata Consultancy Services is an IT services, business solutions and outsourcing organization that delivers real results to global businesses, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled services delivered through its unique Global Network Delivery Model™ recognized as the benchmark of excellence in software development.

A part of the Tata Group, India’s largest industrial conglomerate, TCS has over 100,000 of the world’s best trained IT consultants in 50 countries. The company generated consolidated revenues of US $5.7 billion for fiscal year ended 31 March 2008 and is listed on the National Stock Exchange and Bombay Stock Exchange in India. For more information, visit us at www.tcs.com.

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