



## Ad-Hoc Service Network

### Overview

The customer is a leading R&D organization in Japan.

### Business Need

The customer wanted to satisfy the following business needs

- Develop a product targeting the niche market of control and monitoring systems.
- Use a short range communications method for inter-device communications which is also immune from interference from other data transmitters in the vicinity.

### Challenges

The major challenges faced during product development are:

- Algorithm development for creating Ad-hoc communication network based on Bluetooth.
- To create software to work within the constraints of small memory
- To put together the chipsets like ucontroller, SDRAM, audio codecs, BT chipset etc within 4.5mm x 3.5mm PCB
- Develop Visible Light Communications (VLC) capability. VLC was a new technology with practically no commercial knowledge base. All components used in the implementation of this technology had to be designed and developed from scratch.

### The Project

The project aims the development of intelligent devices to perform significant checks on vibration and sound of surroundings. Abnormal conditions are reported to a central location through the wireless ad-hoc network nodes formed using Bluetooth technology. ASN nodes can work as reporting devices by the means of VLC communications technology using LEDs. The node also provides facilities for IrDA communication, I-RrDA remote control operation, open-collector interface and position information through fluorescent light communication.

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The NeST team, consisting of around 8 people spent 6 months working on this project .The project scope included development of hardware, firmware and software required for creating the Ad-Hoc Service Network.

## **Benefits**

The ASN project designed for the client provided the following benefits

- A very cost effective solution to create Ad-hoc network using Blue Tooth technology.
- Proved Visible light communication can be effectively used.
- The technology can be incorporated with small infrastructure change in the existing system.
- Use of state of art technology in Ad-Hoc Service Network.

### **For further information, please contact:**

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