HPMicrosystems

2009

Remote Monitoring Mechanism

H P Microsystems (P) Ltd

E#7,Infocity

Opposite Golf Club

Bhubaneswar

India – 751024

+91 674 6570338

Remote Monitoring Mechanism

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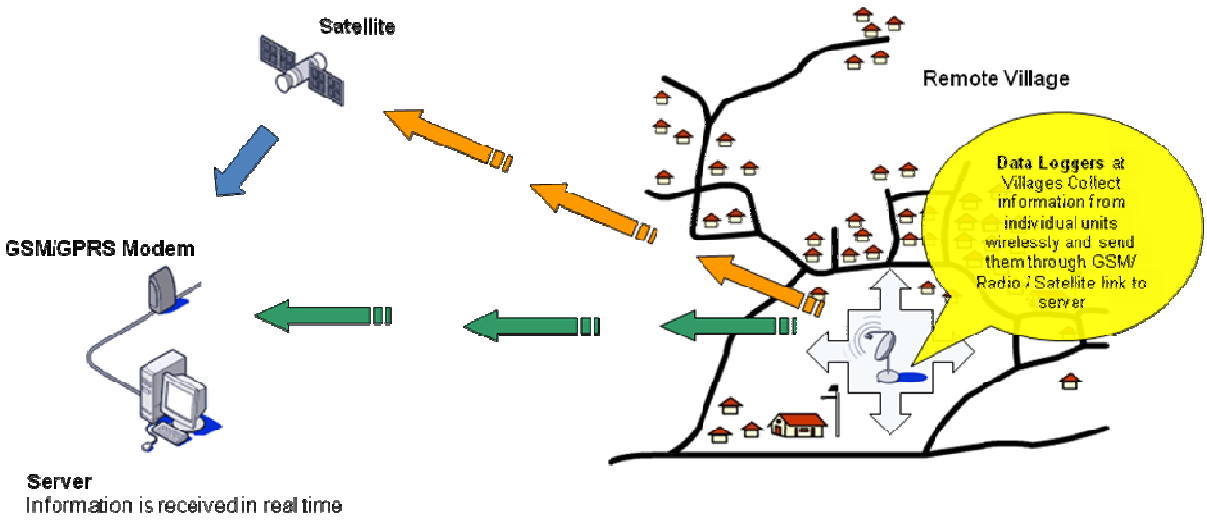
ORISSA has mare than1500 remote villages or hamlets which are to be electrified through Biomass Gasifiers or SPV Home lights / Street Light systems or SPV Power Plants. If a device malfunctions, report of its malfunctioning takes a lot of time and on an average the defective device is left unattended for nearly 10-15 days. This defeats the very purpose of electrification and therefore a system has been developed for remote monitoring of these devices on a day-to-day basis. The remote monitoring mechanism involves the activity of each device to be monitored by a data logger. This data is transmitted directly or through repeater stations to the OREDA server.

If a device does not show any activity for 24 hrs , it is presumed that the device is not working and an alert message of the malfunction device (name of the beneficiary & village name) is forwarded to the AMC provider.

The monitoring mechanism has been developed by H.P. MICROSYSTEMS PRIVATE LIMITED , Bhubaneswar and is being fine tuned for large scale replication.

The pilot project has been implemented in BPEP , Bhubaneswar under R&D programme funded by the State Govt.

Large scale assembling (50k +) would bring down the cost of monitoring to about **Rs 750** per system / year



H.P Microsystems (P) Ltd, Plot No –E#7 Infocity, Patia, Bhubaneswar -751024
0674 – 6570338 , 99370 92395 , www.hpmicrosystems.in

H P Microsystems Inc. 2146 Avon Industrial Drive Rochester Hills Michigan USA 48309

Remote Monitoring Mechanism

Typically a remote village covered under RVEP has 20- 70 solar lighting systems. We have implanted small wireless sensor nodes within each system. These sensors have range of up to 1.6 miles in line-of-sight and use commercially free 2.4 GHz frequency. Each wireless sensor is backed by microcontroller. Each wireless sensor node has its own unique identification code. A typical village where these sensor nodes will combine together to form a wireless sensor network can support up to 255 nodes. The signals hop from one node to other forming small star networks which finally reach the Data logger. Data logger is a microprocessor or micro controller which can receive signals from individual Solar lighting systems and combine them to form a serial data signal which is further transmitted through a variety of ways depending open the network availability in or around the village.

Benefits of RMM

- Each device can be monitored on a day-to-day basis including battery , PV and lamp status
- Actual hour of working of each device can be noted
- Theft or tampering of the systems can be alerted to implementing agencies.
- In case of defects, immediate action can be taken
- This monitoring mechanism is the methodology suggested in the RVEP,VESP CDM Project
- Monitoring of AMC contracts of suppliers can be done with the help of reports generated

Applications of RMM

- Flood monitoring system for Dams
- Temperature and Humidity monitoring solutions for Hotels and Hospitals
- Remote monitoring for power plants
- Industrial Lighting control and monitoring
- Asset tracking solutions for Hospitals
- Wildlife Monitoring Solutions
- Solar Fencing and monitoring for Sancturies