ZigBee based Budget Distribution and Management

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Abstract: We present a framework for Budget Distribution and Management in any Organization or for any Sector using ZigBee technology. It is used to create several spontaneous hierarchical networks in which the node of a single network can be a node of any other network . The requests for the budget is requested from the bottom level network nodes and it is forwarded to the parent network until the budget is sanctioned. The requested budget and the purpose for granting the budget is also stored at the application server database. The main advantages of the proposed framework are (1) the granting or sanctioning the budget can be easily verified by all the higher levels, (2) corruption less budget management, (3) distribution of budget for all the networks can be easily done, (4) taking reviews from all the members of an organization and check whether the sanctioned budget is used for the processed request or not.

1. INTRODUCTION:

Now a days many Networking Technologies are evolving, among them one of the useful technology is ZigBee technology[1] which evolved from wireless personal area networking(WPAN). ZigBee has evolved in order to overcome the limitations of Bluetooth[2] and Wi-fi[3].We provide ZigBee communication in our application since ZigBee will have the High data transfer rate and supports multicasting. ZigBee protocol is the patent free.It is the first industrial standard WPAN technologies that provides short-range, low-power and for secure communication. In order to provide long- range, we use the "HTTP" protocol which access through the "INTERNET" in order to communicate with other networks and Message Digest Algorithm[4] for security. ZigBee supports Mesh networking which is very useful in our application in which all the nodes cooperate in the distribution of data in the network. It is a new wireless network protocol stack of IEEE 802.15.4 for use in industrial equipment and home appliances.

2. THE EXISTED SYSTEM:

The Government of Andhra Pradesh, India currently distributes and manages Budget by using an Budget Municipal Manual[5] which consists of several procedures like Budget Overview, Budget Preparation, Budget Monitoring and Maintenance, Budget Watch Register. After all the phases which were mentioned above are completed the government sanctions and releases the Budget.

3. THE PROPOSED SYSTEM:

The Zigbee based Budget Distribution and Management framework which we have developed can be integrated to the currently used Budget Manual used by the Andhra Pradesh Government which eases the Budget Sanctioning, Distribution and Management. Our framework also provides feature of requesting the Budget from the lower authority to the higher authority in the government. Our framework can not only used it Andhra Pradesh government but can be used in any organization where we can build a healthy society with free of corruption. Budget flow can be seen by all the people in the network ,like (for what the budget is sanctioned ,how much budget is sanctioned).When the sender node sends the request to the intermediate node if the intermediate authority does not sends the request to the destination then the sender can directly send its request to the destination node. Here, we follow Bottom- Up and Top-Down approaches. When the sender sends the request to the higher authority, we follow Bottom-Up approach. When the budget has been sanctioned, we follow Top-Down approach and when the budget is left over or exceeded for the requested work the node send or receive budget from the neighboring nodes i.e., authorities also.

4. FRAMEWORK WORKING MODEL

4.1 System Overview

In order to distribute and manage budget for any organization, all the authorities at each level must create an network using this application, where the admin node of the network is the higher authority node when compared to the authority node of the current network to use this application. By selecting use network option in the application, the authority node can request budget to the higher authority or the node can view the budget sanctioned for their request to the higher authority. By selecting manage network option, the higher authority can accept the requested node and can also remove the node whenever it is not in use. The budget details of the removed node will be stored in the database. By selecting join network option, the user can join with the higher authority node.
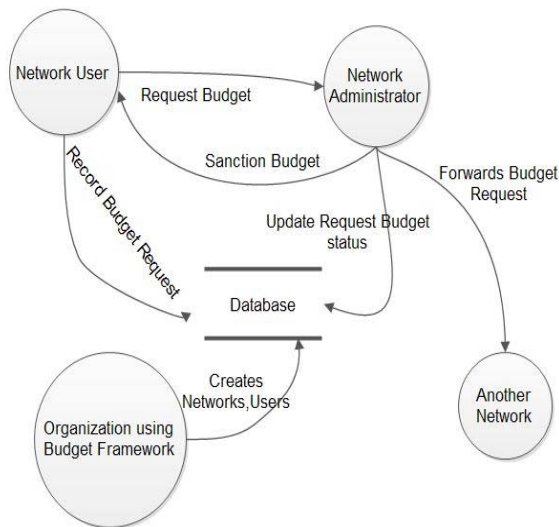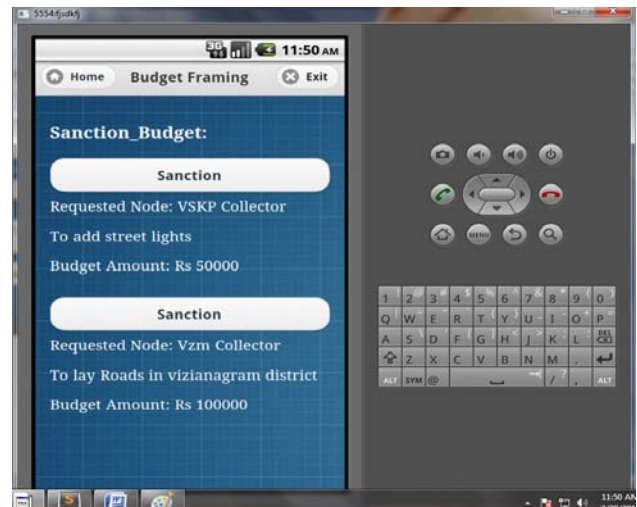
Figure 1: Architectural design

4.2 MODULES:

4.2.1 Requesting Budget:

The Network which was created by the administrator while configuring the framework to work for their particular organization can request a budget to their higher authority, can view the sanctioned budgets which he has requested, can track the status of the requested budget at which authority the request was currently processing.
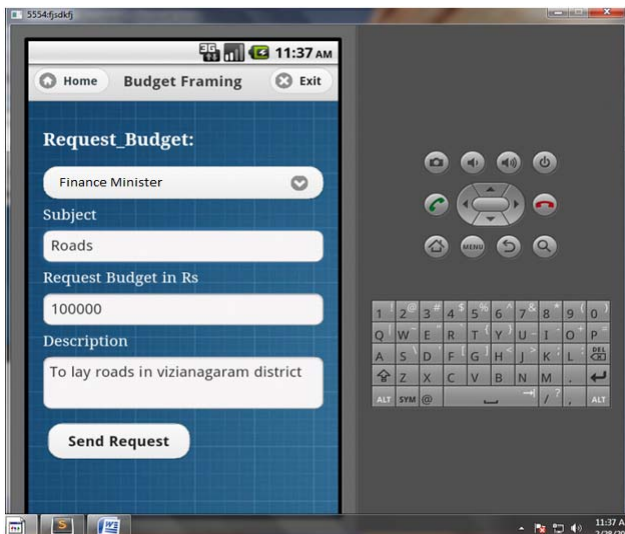

Figure 2: Request Budget.

4.2.2 Sanctioning Budget:

The framework provides creation and managing of several networks in which the root node, administrator of each network is the higher authority and child nodes are the lower authority nodes. The root node of a network can be a child node of another network also. The network administrator can sanction the budget which was requested by its lower authority child nodes or else it can also forward the request to its higher authority node in which it is the lower authority child node for another higher

authority administrator network and this process is continued until the requested budget

Figure 3: Budget Sanctioned.

4.2.3 Recording Requests:

The Budget requests which were requests by several authority networks from the organization which uses the framework were recorded and stored in a database. The requests are encrypted and stored securely by using the MD5 secure algorithm.

4.3 FEATURES:

The Following are the prominent features of the above discussed Application.

- Corruption less Budget can be allocated in a systematic way.
- This Application can be used in any organization for Budget distribution and management
- Budget flow can be seen by all the people in the network.

5. SCOPE AND APPLICATION:

Only the imagination can limit the applications of the above proposed system

- The granting or sanctioning the budget can be easily verified by all the higher levels.
- Corruption less budget management.
- Distribution of budget for all the networks can be easily done.

6. LIMITATIONS:

- Every user should contain android mobile
- Internet should be provided to access this application
- we are not bothered about liquid cash.

8. CONCLUSION:

ZigBee Protocol based Budget Distribution and Management application was developed to transfer the requested funds from the higher authorities to the local authorities without any corruption. Feedback can be taken from the public and the network node that requested the budget to the higher authority. The users can trace the requested budget

ACKNOWLEDGEMENT

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