Low Cost M2M Architecture for Intelligent Public Transit

An Approach to Modernise City Public Transport for Developing Countries

***Abstract*— The paper proposes a system which focuses on enhancing the usability & productivity of existing bus transportation system in Indian cities. The technology has a role to play for completion of the goal by means of providing an effective solution by establishing a wireless communication network in the city.**

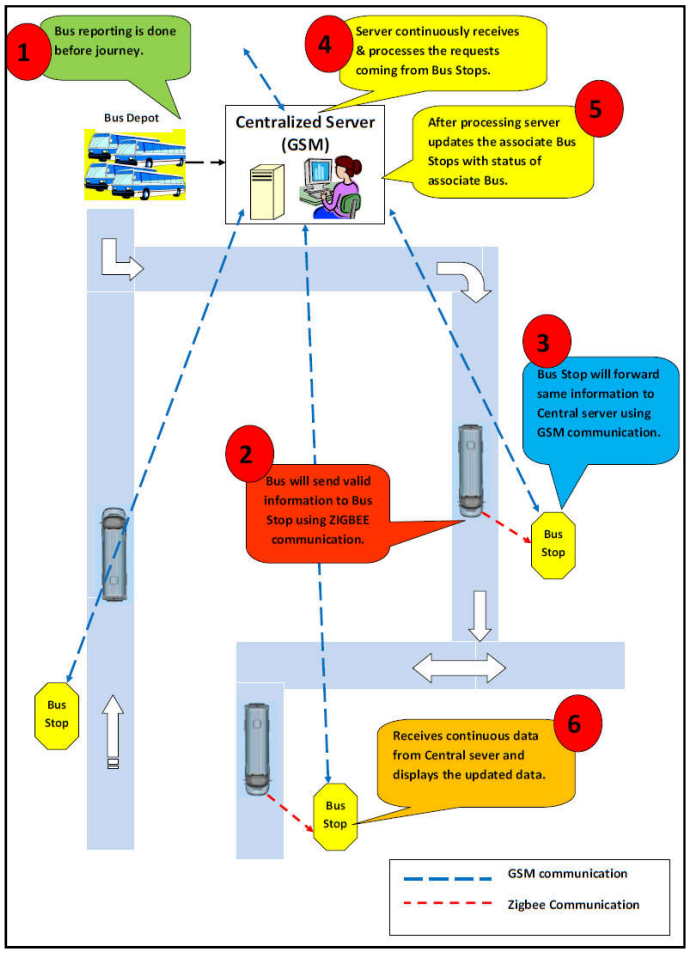

Figure 1: Architecture

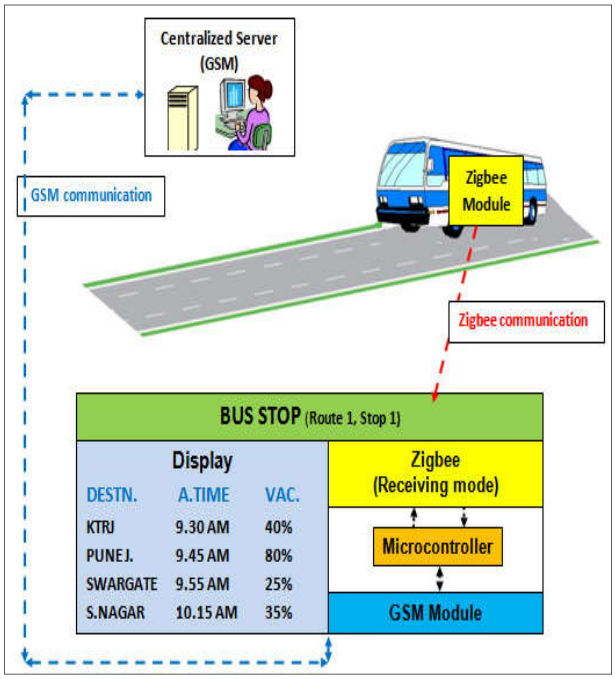

Figure 2: Scenario at Bus Stop

Funtionality:

1. Reporting of the bus for a particular route will be done at bus stand (Central Server) and all the stops on that route will be informed about start of the journey. At the same time, server will store the time at which reporting was done for further calculations.
2. When bus reaches the stop on concerned route (e.g. Stop 1 on Route 1), ticketing machine will send the information about the occupancy in the bus to the bus stop by using ZigBee communication.
3. The Bus Stop will forward the same information to the central server along with a time-stamp (time of arrival).
4. The Central Server will analyze the information and calculate the arrival time and vacancies at all next stops and send the information to each stop.
5. All the stops, after receiving the information from the Central server will update the display.