

- NAV Embedded Navigation System for] People

S. Sai Santhosh¹, T. Sasiprabha², R. Jeberson³,

Sathyabama University, Chennai – 600 119, India.

¹s.sai.santhosh@gmail.com, ²tsasiprabha@gmail.com, ³jebersonin@yahoo.co.in

-NAV is a blind navigation system exclusively for blind people. The system with portable and self-reliance allows the blind people to travel through an unfamiliar environment. The proposed system consists of hardware and software components used for effective navigation. The entire system is assembled into an embedded system. In the embedded system two of the major components are GPS receiver and path detector used for determining the current position of the user and find the shortest path to the destination. The navigation process of the system can be initiated when the user gives the destination as voice command. The system will convert the voice information into a string format. The converted string will be compared with the GIS database to identify the location into the map. The system will find the shortest path between two end points using a critical path algorithm. The distance between the intermediate position will be informed through a voice command. The obstacles and hazards of the path will also be detected while travelling and the respective information will be provided to the user through voice command. GIS database used contains details of all spatial and map information. The user can get information with respect to their country and location. The operation of the device will be easy and user-friendly to any category of people.

GPS receiver; GIS database;

I. INTRODUCTION

controller, voice interpreter, path identifier, path detector and drive handler. The system has other connections like Bluetooth, WI-Fi and LAN ports. The map data is stored in an accurate POI (point of interest) with respect to the longitude of the position in the city. More databases are used to store all the highways, roads, paths and important landmarks of the city.

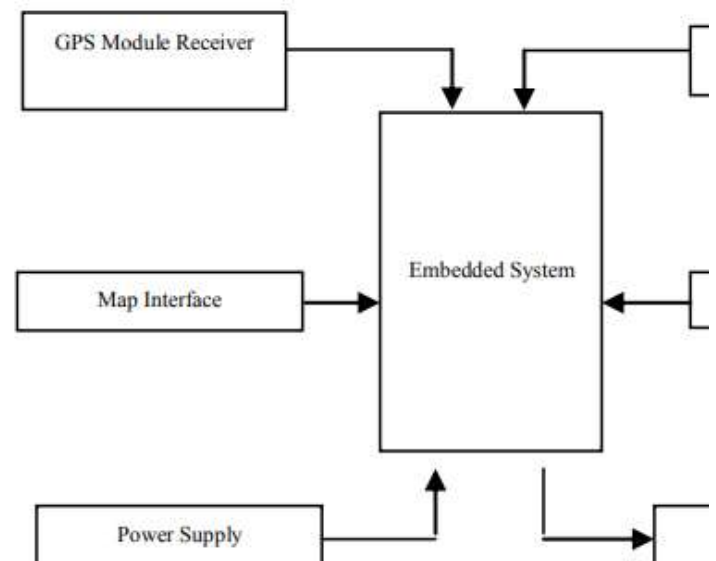


Figure 1. Functional structure of BLI – NAV

The hazards and obstacles of the path can be detected with the respective position of the blind cane. The operation of the proposed system is its weather proof, works in all weather conditions.