Abstract

Complaints and concerns of air passengers about luggage mishandling show no signs of decline. Failure to load the bags onto the aircraft, tagging errors and technical issues were cited by sources in the airline industry as some of the key reasons for mishandled baggage.

The aim of the project is to solve this problem of luggage tracking in aviation industry by replacing the older tags with *Radio Frequency Identification (RFID)* tags. The designed system consists of two modules namely, the luggage tracking module and the RFID reader module. The RFID reader module comprises of NodeMCU interfaced with RFID reader, placed at the Cargo bay of the airplane and the luggage tracking module comprises of an RFID tag and NodeMCU interfaced with Neo-6M *Global Positioning System (GPS)* module, placed in the luggage of the passenger. The passenger will receive a notification when the luggage is boarded or de-boarded onto the plane. Also, location of the luggage is sent to the cloud server. The location from the cloud can be retrieved on passengers' request through Android application developed on Android Studio using Java and *Extended markup language (Xml)* languages. Arduino *Integrated Development Environment (IDE)* is used for providing a programming environment to the NodeMCU on Windows operating system.

The user name and password for logging into the Android application will be given to the user during checking-in and the luggage tracking module will be placed in their luggage. It will be removed from the luggage at the destination. Thus, making it a one-time investment attending some major loopholes in the current system.