RFID Based Real-time Train Tracking System for Sri Lanka

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Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Dedication

This research paper is dedicated to my family members who helped and support me lot during the study and also dedicated to my friends who helped me in various ways while the study.

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Abstract

During day-to-day train operations in Sri Lanka, unforeseen events may cause train schedule inconsistencies. This causes train delays a habitual experience for Sri Lankan train passengers. This requires a real time train tracking system for the train passengers, in order to locate trains that they wish to travel. Based on accurate monitoring of train positions, potential delays can be predicted and inform the train passengers at real time via a comprehensive web application. Using this proposed system, passengers will be able to find out exact last location of a train and predicted arrival time to a particular railway station.

The real-time train tracking system uses Radio Frequency Identification as its location tracking technology. Each train is equipped with two Radio Frequency Identification tags and each railway platform at railway stations is equipped with a Radio Frequency Identification reader. Tracked train location details will send using Arduino wireless communication technology to the central database server. Then passengers will be able to access the real time train tracking details via the web application. Passengers can select the starting railway station and destination railway station from the web application. After that, web application will display currently available train details and their predicted arrival time to starting railway station selected by the passenger.

The web application also facilitates the system users (Ceylon Government Railway users) to perform administrative tasks such as add/edit trains, railway station details and setting-up some system parameters.

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