



### Introduction

The study based on best framework design using internet of things (IoT). IoT refers to an established communication between identified things through internet; like sensors, tags, Wireless Sensor Network (WSN), Radio-Frequency Identification (RFID), GPS. (Kopetz , 2011), (Atzori et.al., 2010).

### Research Objectives

Research aims to develop a framework that allows integration of technologies within the IoT paradigm to provide an efficient and effective way of managing public transportation in a resource challenged environment such as in Free State.

### Analysis and result

The study shows that majority of passengers wait for the transportation vehicle. 40% of the passenger do shopping while they are waiting. Passenger usually disembarks pass their wanted stop. Most of the passengers are using smartphones. Almost all the drivers are hired and that because the owners either have more than vehicles or because of their old age. Vehicles' owners believe that most of the hired drivers don't show all of the gained money(ICT) (Mumtaz, 2006)- (Target, 2015).

### Recommendations

Make use of Unstructured Supplementary Service Data (USSD) command and SMS for a non-smart phone holder, and install the application on smartphones; using accessible Wi-Fi. Assign an employee to help non-computer literate passengers; a screen to display all taxis/buses position using GPS, WSN, and RFID. Use two Infra-Red (IR) sensors to determine the movement direction of the passengers if it is in or out to count passengers. See Fig.1.(example of a designed framework method).

### Methodology

A case study in free state public transportation. The study is qualitative by nature. A survey uses observation that obtained from the visited places i.e. Taxi, interviews for some of the taxi's owners, and questionnaires that is divided to three types (Passengers, Drivers, Owners).

### Challenges

Part of the challenges are type of passengers who have difficulties with knowledge which is either language or technology uses. No transparency on most vehicles because they are driven by non-owners.

### References

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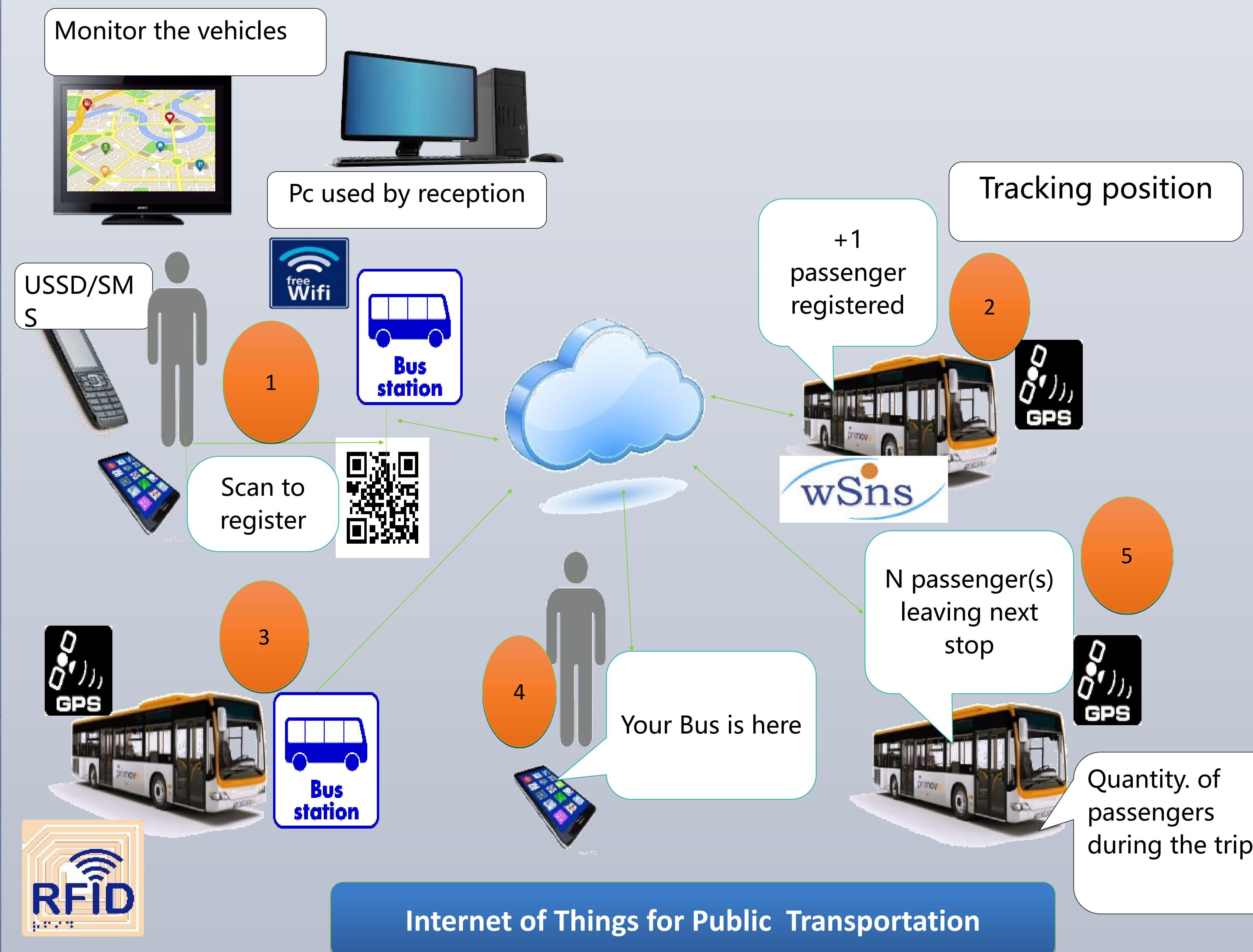


Fig.1(Example of suggested public transportation framework)