

# A Navigation Assistance System



Communications &amp; Information

Consumer Electronics

Digital Broadcasting, Telecommunication and Optoelectronics

## Opportunity

Public transport is common place in modern society in almost every urban center. Public transport comprises many different types of transport such as rail, bus, ferry and so on. Public transport is commonly used by a number of commuters, especially in large cities. For example in Hong Kong millions of people every year use the public train service and/or the public bus service and/or public ferry service.

Every city includes a number of impaired people, examples of these people with impairment may include visually impaired people, audibly impaired people (e.g. deaf or partially deaf people), physically impaired people (e.g. people with physical disabilities) or mentally impaired people (e.g. people with mental illnesses or disorders). Accessing and using public transport can be challenging for impaired users.

Mobile devices and the use of mobile devices is ubiquitous in modern society. Mobile devices are used by everyone including impaired people. In some instances mobile devices are modified or include functions that allow impaired users to use mobile devices. Commonly used mobile devices are mobile phones, smartphones, tablets, smart watches and laptops.

Currently several public transport providers transmit timetable information or route information for public transport to a user's mobile device. Alternatively there a number of apps that are provided for downloading to a user's mobile device that present timetable information and route information. Some examples of a mobile device app are apps provided by Kowloon Motor Bus (KMB) company for providing users timetable information for buses operated by KMB company or the MTR company app that provides train timetable information to users.

Most of the current apps and information pushed to mobile devices is targeted towards unimpaired users. Further there are no mobile device apps or functions that provide navigation assistance to users to access public transport and use public transport. Functionality to assist impaired users is limited. It is an object of the present disclosure to describe a navigation system to aid impaired users in accessing and using public transport or at least provide users with a useful alternative.

### IP Status

Patent granted

Technology Readiness  
Level (TRL) ?

2

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ConceptProof  
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Funding

Build Value

It is to be understood that, if any prior art information is referred to herein, such reference does not constitute an admission that the information forms a part of the common general knowledge in the art, in Hong Kong, China or any other country.

## Technology

The present disclosure generally relates to a navigation assistance system to aid one or more users, in particular the present disclosure relates to a navigation assistance system to aid one or more impaired users in the use of public transport or other transport vehicles.

## Advantages

- The location beacon transmits the real time location of the bus to the user device and updates the location of the bus on the user interface in real time or provides an audible notification or other forms of notification (haptic feedback, vibrations etc) which may be advantageous to visually or hearing impaired users
- The system providing real time information provides impaired users with accurate information about public transport which helps impaired users to use public transport
- There is limited need to use GPS information
- Further localized processing of location detection and time detection/arrival time updates improves accuracy of the system making the system more useable for impaired users
- The navigation assistance system provides aids impaired users in the use of public transport by providing navigation and other useful information

## Applications

- A user device associated with a user
- A location beacon associated with and fixedly positioned at a stipulated location
- A locality device associated with a transport vehicle, the locality device being associated with a specific transport vehicle
- A central computer system
- The location beacon being in two communication with the user device, the locality device and the central computer system

