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Providing Entertainment for People with Visual Disabilities on Civil Aviation using (Braille-Barcode-Listening) BBL

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Abstract

With today's significant development in information technology, global and local airlines are striving to provide the best services to the traveler for convenience, safety, and the right price. A key aspect of choosing and evaluating the performance of airlines can be achieved in long periods of time And up to eight hours, during these trips welcomes the travel to reduce boredom and fatigue of passengers with the length of flights, and here the researcher calls for providing an exceptional service for people with visual disabilities using Braille and information using technology Braille- Barcode- Listening.

Keywords: *Visual Impairment, Blind, Civil Aviation, Barcode, People with Special Needs, People with Disability, Braille- Barcode- Listening*

1. Introduction

In this paper suggests using bar code technology with Braille code and programming application to finding audio material for the passengers with a visual disability on the aircraft. Braille-Barcode-Listening BBL from the name, we can understand what kind of tools we need to use to create and use this method

Some readers may be surprised and ask a question why this focus on the subject of entertainment for people with visual disabilities on flights and any flight takes only a few hours, and everything ends after that!

This is a legal and humanitarian right for people with visual disabilities. With the high level of information technology, the addition of a tool for the entertainment of people with visual disabilities will not be a big problem, especially as it is in line with the law and safety regulations. And self-confidence to engage the disabled in an active and positive society

The tools which are used in the method:

Braille (Hensher, 2015; Verma, 2013; Lawrence, 2015; Rocha et al, 2017).

It is the code used by people with visual impairments in writing and reading. This code is originally made up of six distinct three adjacent points that can be felt by the fingers. The user will touch them to identify what they mean by being letters in line with the UNESCO (UNESCO (1990; Maurel et al, 2012; Kway et al, 2010) Guide (Clutha & Mackenzie, 1953; Alnfiai & Sampalli, 2017; Malamiri, et al; 2016) to Braille, According to historical sources, the invention of this code is due to the French Louis Braille in the nineteenth century AD but official recognition had been late until the mid-twentieth century has been recognized as a language used by blind and visually impaired for reading and writing (Simpson, 2013; Zarchi et al, 2016; Saidi & Siew, 2018).

Bar Code _____ liner bar code

28061978

Fig. 1.

There are many of the passengers are using recreational materials to deal with long many hours on the plane. In my travel I noticed that one of the passengers had visual impairment, in the beginning, he asked the hostess to help him and was very kind to help him, The hostess placed the earphones in his ear, and she helps him to choose audio material but she went to another mission, the audio content that was heard by the passenger for a short time, only! Maybe? Or he needed to change the Audio material, or it was stopped, he tries himself to make the material work again but he cannot. After that, he decided to ask the hostess to help him, but she was busy assisting the staff in other missions. His near hot man tries to help him, but he did not choose his favorite audio material. That was very bad, and the passenger with visual impairment was angry and said (I was paid the full fee for this, why I cannot take the service like the other passengers?

Of course, this is expected because the hostess has the routine tasks are great, and it does its duty. This kind of problems needs to found a solution. in this paper, the researcher put method to make the chooses in the passenger with visual impairment hands himself using (Braille-Barcode-MP3)

Some companies and governments are focusing on providing laws and regulations to implement on the ground by increasing the level of services available to people with disabilities (Alnfiai & Sampalli, 2016; Mardani & Fallah, 2018)

The law of protection of the rights of people with disability of Iraq No. 38 of 2013 (Al-Jaleeli & Galimyanov, 2018)

It is a high level of development in this field.

Fig. 2.

But it did not address the provision of recreational materials provided to the visually impaired passengers like other passengers

Another example of services offered by an airline is taken from the official company page and does not include recreational facilities for people with visual disabilities.
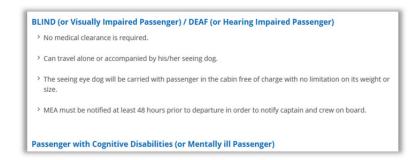
BLIND (or Visually Impaired Passenger) / DEAF (or Hearing Impaired Passenger)

> No medical clearance is required.

> Can travel alone or accompanied by his/her seeing dog.

> The seeing eye dog will be carried with passenger in the cabin free of charge with no limitation on its weight or size.

> MEA must be notified at least 48 hours prior to departure in order to notify captain and crew on board.

Passenger with Cognitive Disabilities (or Mentally ill Passenger)

Fig. 3.

What I request in this paper is only the services provided to people with visual disabilities and following the laws and agreements signed. This must be noted in the process of manufacturing and operating civil aircraft on international or local roads where governments and companies are committed to these laws and treaties to provide services to persons with disabilities and reduce discrimination against them.

2. Application Method

Using Linear Barcode and Braille, two methods can be used to display the audio materials for the passengers with a visual disability.

First, we install an entrance that fits the barcode reader on specially selected chairs that can be used for ordinary people and can be used for people with visual impairments. The symbol is a bar code that expresses the access code of the audio material. Bar code boundaries are also defined by Braille codes so that the user knows the exact location of the icon. Users must be trained in advance to use Braille code.
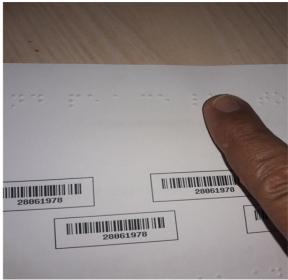

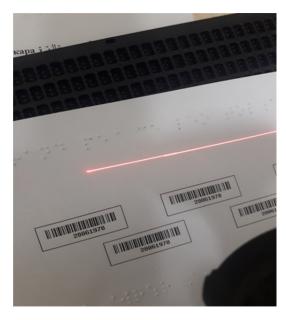**Fig. 4.** The first step: read Braille code with the user's fingers.

Fig. 5. Step 2: Read the bar code by linear barcode reader

Fig. 6. The process takes place in a dark room or a bright room with the same efficiency

The researcher proposes to design the window according to the shape figure 4.

And choose full screen without zoom out and zoom in to keep the size fixed for the user either with a flexible screen cover on the chair in front of the traveler or a separate device with a touchable screen can be used by children and adults.
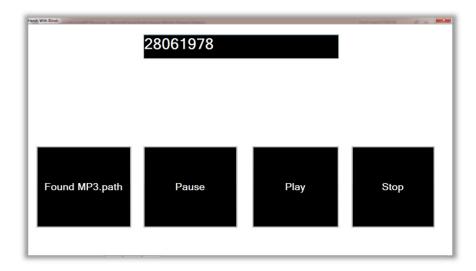
Fig. 7. Suggested window to provide audible audio services for people with visual disabilities Figure 4

The second is to use a flexible cover with Braille indicators on the touch screen in the form of buttons with the design of the entertainment page following these buttons so that once the button is pressed, the audio material is activated. These buttons are compatible with specific sound materials defined in a booklet written by Braille. If the passenger sitting in the seat is an ordinary person who does not have visual impairment we take up the cover away and the passenger can use the touch screen as the other passengers

3. Conclusion

The belief in the values of human justice and the provision of equal access to services necessitates local airlines to change the entertainment tools to suit people with visual disabilities. These travelers pay full wages to companies and are supposed to provide these services because they will not be costly and will provide a fairer system for travelers.

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