

No Billing Queue Purchase System with Auto Product Detection & Android Payment Using Lifi, Iot

No Queue Billing – LiFi & IOT

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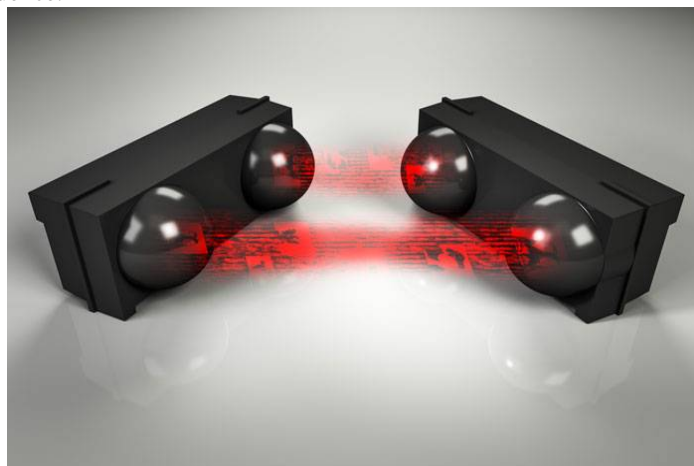
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ABSTRACT: In this paper we are going to accomplish the correspondence foundation between the transmitter and recipient light correspondence. We have included LiFi Module. Android Application is conveyed on the Consumer Phone which is appended with LiFi Hardware by means of OTG. Each Product is appended with LiFi Module. Client will include the Product and comparing ID and its Cost is included the Android App and at last aggregate Payment is made by the client by means of android based Payment framework. Points of interest are exchanged to the shop server. Shop Server will speak with the Gate segment of the shop. Entryway's LiFi will correspond with the LiFi which is joined with the Trolley for Product confirmation. At long last just Billed Products are conveyed.

KEYWORDS: LIFI module, OTG, LIFI hardware, Android application.

I. INTRODUCTION

VISIBLE light communication (VLC), alluded to as shortrange optical wireless communication utilizing the visible light spectrum from 380 to 780 nm, has pulled in much consideration. It gives an information join by utilizing light emitting diode (LED) at the transmitter to discharge light flags for conveying data and photodiode (PD) at the recipient to recognize light force for recouping data. Subsequent to the LED-based luminaires will be ubiquitous for indoor enlightenment in a couple of years, VLC may have a promising future by serving double elements of brightening and correspondence.



Intensity modulation with direct detection (IM/DD) is generally used in VLC systems. Many modulation techniques based on IM/DD have been proposed, including single-carrier modulation like on-off keying (OOK) or pulse position modulation (PPM) and multi-carrier modulation such as orthogonal frequency division multiplexing (OFDM) in

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several variants. Moreover, several forward error correction (FEC) coding schemes for reliable communications have been investigated. An FEC coding scheme for dimmable visible light communication based on the modified Reed-Muller codes was proposed. The authors presented a trellis-coded pulse amplitude modulation scheme using RGB-LED to achieve performance improvement.

In this paper, OOK modulation is adopted due to its simple implementation. To overcome the shortage of its bandwidth efficiency, we utilize parallel LED wicks to transmit simultaneously multiple data streams, resembling a multiple-access system. Therefore we can use similar methods as investigated in to improve the BER performance.

Different from block Markov superposition transmission (BMST) codes instead of turbo codes are implemented here, which have simple and predictable performance lower bounds. At the transmitter, a single stream of data is first encoded by a properly designed BMST encoder and then partitioned equally into multiple streams. Each stream is used to drive an LED wick after being modulated into on/off pulses. Also different from a closed-form power-allocation scheme is employed, which leads to an equispaced pulse amplitude modulation (PAM) constellation from the receiver's perspective.

Furthermore, we propose to use precoding to achieve Gray mapping, which is critical for improving performance while avoiding iterative processing between the detection and the decoding. Simulation results show that the proposed scheme improves the BER performance significantly.

II. WORKING TECHNOLOGY

A. EXISTING SYSTEM

In EXISTING SYSTEM RFID and Barcode readers are widely used in real time for shopping. But this technology is not giving the proper solution for long queue while purchasing.



B. PROPOSED SYSTEM

In PROPOSED SYSTEM it is just giving the communication establishment between the transmitter and receiver light communication.

C. MODIFICATION PART

In our **MODIFICATION** part we have added LiFi Module. Android Application is deployed on the Consumer Phone which is attached with LiFi Hardware via OTG. Every Product is attached with LiFi Module. User will add the Product and corresponding ID & its Cost is added in the Android App & finally total Payment is made by the user via android based Payment system. Details are transferred to the shop server. Shop Server will communicate with the Gate section of the shop. Gate's LiFi will communicate with the LiFi which is attached with the Trolley for Product verification. Finally only Billed Products are delivered.

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III MODULE SPILT UP

A. ANDROID APPLICATION :

In this module we will create an application to product name, product price connected with LIFI with shop server Mobile Client is an Android application which created and installed in the User's Android Mobile Phone.. For creating an Application, we will be using Advanced Java Concepts like JSP and Servlets. While creating the application, we'll assign the design fields like Username, Password, Phone and other information. Once the created the user is allowed to enter the data. Also the server will store the data and allow the purchase to enter in to the application.

B. SHOP SERVER :

In this module, Server is used to verify the product information and allow the User to purchase. Product information will be stored in shop server. Also the Server will analyze the contents user. So that we the server will extract the identify. Also the Server will be retrieving the user information like Access time and location which is used to find the User's location and we can provide the any necessary help to them. The Server Module will maintains all the User's access information and respond to the Clients request. Since the communication between the User and the Server is frequent, we have to establish the communication between them. For this purpose we can provide Network connectivity between them. The Server will extract the User information based on the query they've entered in the search bar.

C. LIFI HARDWARE SETUP :

Li-Fi is a bidirectional, high speed and fully networked wireless communication technology similar to Wi-Fi is a subset of optical wireless communications (OWC) and can be a complement to RF communication (Wi-Fi or Cellular network), or a replacement in contexts of data broadcasting. It is wireless and uses visible light communication or infra-red and near ultraviolet (instead of radio frequency waves) spectrum, part of Optical wireless communications technology, which carries much more information, and has been proposed as a solution to the RF-bandwidth limitations. A complete solution includes an industry led standardization process.

C. ANDROID PRODUCT PURCHASE :

In this module whatever the products purchased by the customer is added in to cart then automatically the android phone detects the product id and price its shown to customer. Once Customer purchase the product , that product id matched to the lifi. Cart also connected with LIFI connection. The final amount is shown to customer in

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android product purchase application. Next ready to pay the bill using mobile banking or net banking by using android mobile application.

D.BANK SERVER :

In this module, After purchasing the products , user can pay the bill in android mobile itself. once user purchased all items finally debit the amount from customer account. In this information automatically send to shop server.

D. GATE SECTION :

In this module the Server will verify the products provided by the customer and verify them with the shop server and then allowed to the customer will leave . If the customer arrived the gate section LIFI matching with the products, incase customer didn't pay the amount like that some issue, discard the products. Gate section also using LIFI connection. While customer leaving from the shop automatic product detection established.

IV.COMPARISON BETWEEN BARCODE SCANNER AND LIFI

A. DISADVANTAGES OF BARCODE SCANNER

- Manual billing.
- Use barcode for billing.
- Human staff is needed for billing.
- Low product cost but overall expenses are much high.
- Difficult to track the product.
- Getting product information is difficult & time consuming.
- It does not disclose any automatic way of indicating to the shopper how the total bill is affected as objects are added or removed from the cart.
- In billing section, one by one product is checked and entered, this will take few minutes in the case of large number of product purchase.

B. ADVANTAGES OF LIFI

- Automatic billing
- Does not use barcode billing
- Human staff is not needed for billing
- Easy to track the product
- Time saving

V.ALGORITHM / METHODOLOGY:

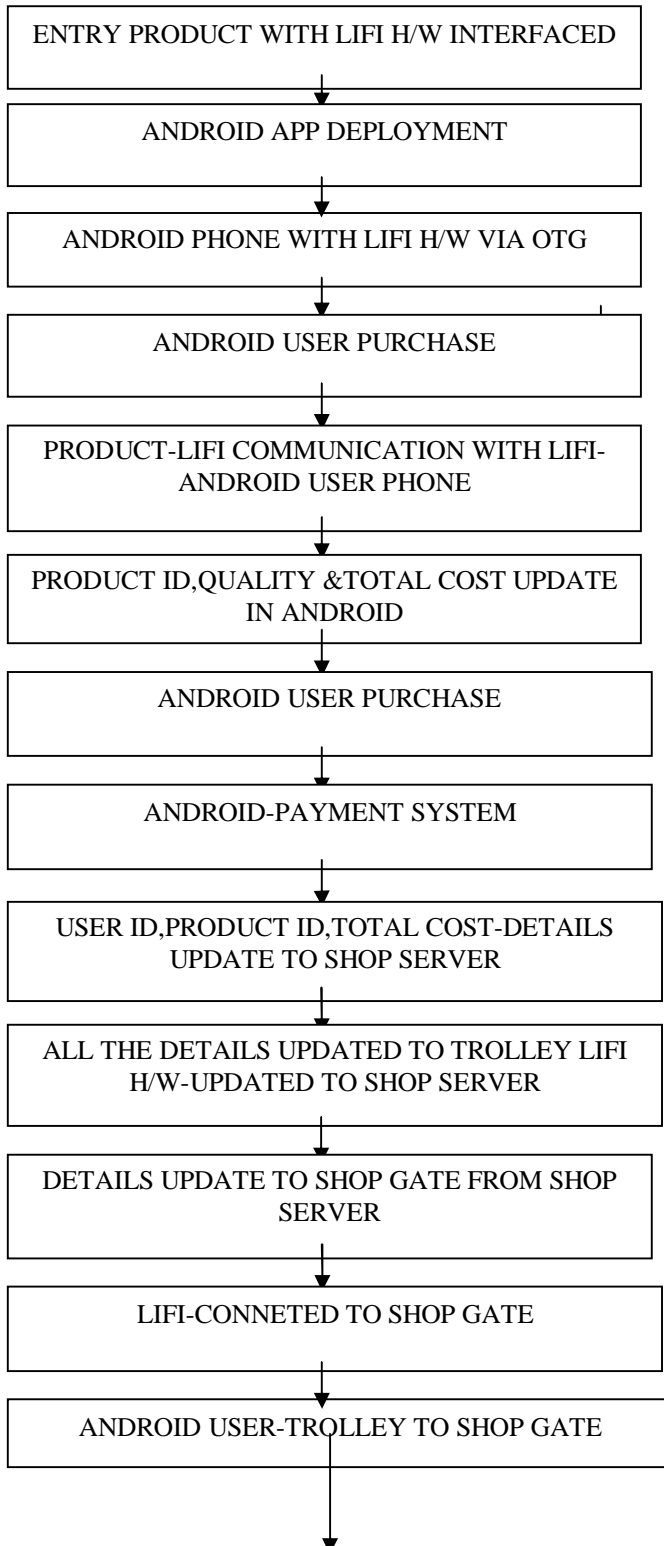
- Lifi

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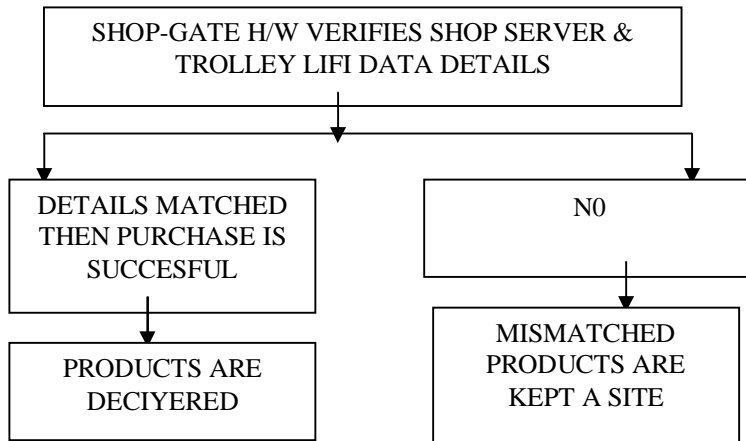
VI.FLOWCHART REPRESENTAYION OF PROPOSED SYSTEM



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VII.SYSTEM SPECIFICATION

A. Hardware Requirements

Processor	:	Core i3/i5/i7
RAM	:	2-4GB
HDD	:	500 GB
Bluetooth		

B. Software Requirements

Platform	:	Windows Xp/7/8
Front End	:	Java-JDK1.7,Android- sdk,Eclipse,Apachae tomcat
Back End	:	MYSQL
Big Data	:	Apache Hadoop -2.5.1

VIII.CONCLUSION

In this paper, we present a coded modulation scheme based on LiFi for indoor visible light communications. Since the bandwidth of a single LiFi light is limited, we use parallel LiFi wicks with different product current to transmit data simultaneously.

IX.FUTUREWORK

In the present framework we are going to utilize LIFI equipment and LIFI module appended with each product. Then we are going to handle installment through android payment system. Hence we are going to stay away from line development for payment process and at the door area for item confirmation.

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