

## SMART PACKAGING SYSTEM

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### ABSTRACT

The smart Packaging solution aims to use an electronic packaging solution to overcome the problem of opening packages during transportation and also to monitor the inner and outer atmosphere of the package. Intrusion prevention system uses different types of sensors that repeatedly monitor the physical parameters inside the package to make sure if the package has been opened, or there has been some rise in the temperature. Once the state of condition has been delivered to those receivers, they can take necessary action. If there is no warning then a normal delivery takes place, the customer uses his/her mobile phone to scan a QR code displayed on the IPS kit. The customer gets an OTP to his mobile number for receiving the package and after entering an OTP the device will be reset. The proposed solution guarantees that the customer receives the reliable products.

**Keywords:** Internet Of Things, Micro Controller, IR Sensor, MEMS Sensor, GPS, WIFI-Module.

### I. INTRODUCTION

The Intelligent Packaging resolution aims to use associate electronic packaging resolution to combat the matter of gap packages throughout transportation still on live the characteristics of the merchandise, the inner and outer atmosphere of the package. The project IPS aims to use electronic packaging solutions to effectively trigger associate alert once a package is opened. this can be done by victimization several sensors in a very fail-safe system. the matter with single sensor-based systems is that they are doing not correlate information from totally different means that IPS uses several sensors that incessantly track the physical parameters within the package to determine if the package has been opened or there has been some rise in temperature (for pharmaceutical and temperature-sensitive products). Once this alert has been sent to those involved, they will take necessary action.

### II. MOTIVATION

In this modern era every one's day to day life is linked with online platforms for various requirements like shopping, food ordering and couriers. There is no proper way to pack the goods and transfer it from source to destination. Moreover, we noticed customers receiving dissimilar items and not matching with the customers' expectations and there is a chance of theft or replacement of goods during transition from sender to receiver. So, to overcome this drawback we decided to come up with effective solution to implement a smart packaging system.

### III. METHODOLOGY

The Smart Packaging uses LED display for every operation, LDR sensor is used to monitor the package closed or not, MEMDS sensor detects Whether the package status during transition. IR sensor monitors the presence of item in the package. The current location can be tracked using GPS, user receives the damage message in case of mishandling during transition and DHT sensor monitors the temperature and humidity

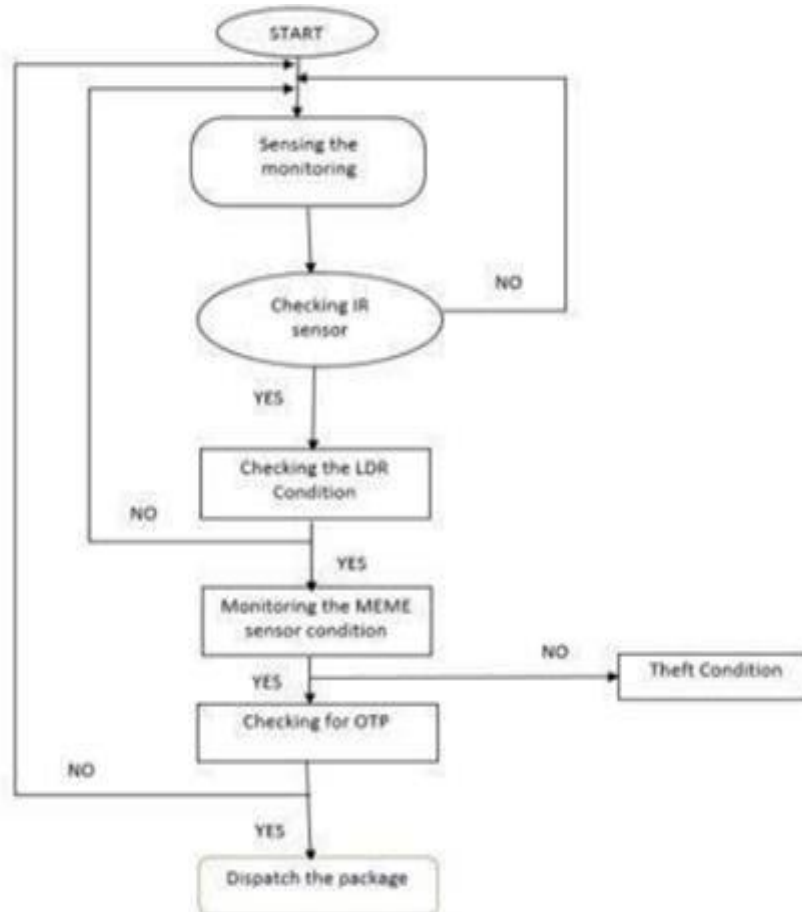


Fig 1: Flowchart for Smart Packaging System

#### IV. RELATED WORKS

[1] Patricia Megale Coelho , The packaging is an important aspect in logistics for safe distribution of products. In a recent study it implicated that about 40% of plastics and 50% of paper is used for packaging in Europe, it projects that packaging sector is large sector for material usage. In order to reduce the usage REUSABLE packaging is the best option to reduce the environmental impacts. From this study it helps better to understand the underlying design and impacts of more sustainable packaging systems.

[2] Monirehalsadat Mahmoudi, The gradual shift towards reusable packaging has been area of interest in supply chain systems for secondary packaging or transportation of products. Even though it has been implemented by many MNC's worldwide it didn't get much attention as required. By implementing this idea, we can combat environmental problems and reduces cost burden on logistic chain because of reusability.

[3] T. K. Srinivasa Gopal, The dynamic processes occurring on the market of supply services verify the explore for best solutions. fashionable supply centres that explore for best solutions. fashionable supply centres that area unit adjusted to the wants, whereas conjointly supported by fashionable technology area unit the solution to the declared demand from traveller companies that place a stress on the speed of delivery and quality of service.

[4] Zhibo Pang, Qiang, Chen In specific delivery, couriers can make a mass of flight logs once transporting shipments. to research these logs is of nice price for the promotion of specific delivery service. For any analysis supported flight knowledge, map-matching plays a very important role, therefore during this article, we have tendency to style a map-matching service particularly for messenger trajectories.

[5] Junzhe Tian, The given project solves the major mistakes of optimal manage primarily based totally on entire records approximately the movements of each and every vehicle. Structure of the integrated navigation and distributed control system one of the structure is high-accuracy navigation of each traffic individuals in real life (real time).The given study can be applied as a entire software bundle for modelling the motion of

automobiles in a limited a part of the delivery community with the opportunity of centralized control of modifications in man or woman parameters of the delivery community, and selective Director manipulate of automobiles via way of means of converting the parameters of car controllers.

[6] Peter Ragaerta, Bruno De Meulenaerb, The given project solves the major mistakes of optimal manage primarily based totally on entire records approximately the movements of each and every vehicle. Structure of the integrated navigation and distributed control system one of the structure is high-accuracy navigation of each traffic individuals in real life (real time).The given study can be applied as a entire software bundle for modelling the motion of automobiles in a limited a part of the delivery community with the opportunity of centralized control of modifications in man or woman parameters of the delivery community, and selective Director manipulate of automobiles via way of means of converting the parameters of car controllers .

[7] Mike Vanderroosta, Optimization of automobile site visitors is one of the most critical issues of cutting-edge civilization. This article gives new strategies for modeling, simulation and optimizing manipulate structures of an integrated smart shipping gadget with the aid of using regulating the parameters of the shipping community and directing the motion of character vehicles. Methods of dealing with a complicated smart shipping gadget as a dynamic.

## V. APPLICATIONS

1. The proposed model can be used for transportation of different size and type of items in logistics with little alterations.
2. The application also has temperature monitoring facility . so, it can be used in the field of pharmaceuticals for safe transportation
3. The packaging system can be used for protecting materials in field of industries to limit the access

## VI. CONCLUSION

The deficiency in security of courier delivery can be improved in our proposed system. This implementation can prove to be very effective in providing security for the goods and also ensures the safe delivery of goods to respective enterprises/costumers. By using GPS, we can track the location of the package that has to be delivered from source to customer's destination. In vehicle, a server and smart phone are used for courier tracking. A package geographic co-ordinate location can be tracked from anywhere at any time. This system brings innovation to the existing technology and improvising the safety of the packages

## VII. REFERENCES

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