A MARKET STUDY OF DRONE MANAGEMENT FOR HANDLING EMERGENCY RESPONSE AT AIRPORTS IN INDIA

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ABSTRACT

Aviation business in India is growing at an excellent rate. This increases the need for better technological advancements in Indian airports to aid this increasing growth. One major part of airport operations is emergency response. In the dynamic airport environment, there are always a possibility of an accident or an incident. To handle this situation, airports use a detailed plan known as Airport Emergency Plan (AEP). Currently all the units of emergency response such as firefighting unit, first aid unit are independent. This leads to increased response rates and poor communication between the units and also Indian airports are far behind other global airports in terms of technology used. The study proposes a new centralized hub known as RPAS (Remotely Piloted Aircraft Systems) Management hub for emergency response of airports which uses drones for handling different situations and also a maintenance facility for drones in the airport known as RPAS maintenance facility as drone maintenance does not require outsourcing. It will be cost effective step to cut the costs of outsourcing and marking the new era of drone management. RPAS management hub is present in the landside of the airport and constantly communicates with ATC when there are operations on the airside of airport. Drones are highly capable of performing various operations due to its ability to fly in confined spaces as well as their ability to carry various payloads. The study involves 3 major areas of focus. They are firefighting, visual aid and first aid assistance. Depending on the situation, the drones are deployed carrying different types of payloads and supporting mechanisms. This system helps in development of automation in airports and to reduce the response times and communication gap. By better visual aid, many accidents and incidents can be prevented, and lives can be saved. There is need of marketing to position it across airports as cost optimization tool.

Keywords: Drones, Indian Airports, Business, Emergency Response Plan.

INTRODUCTION

Drones have paved the way for several incredible applications over the past year or so, and as we become more familiar with the boundaries, limitations and capabilities of these vehicles we are able to explore new uses in a wide range of industries. Drones as much as they are used for commercial and military purposes, it can be used for emergency response purposes. This can be implemented in the dynamic environment of the airport. In the current world, Drones in airports are used rarely and are used to keep birds away. Drones are known as Remotely Piloted Aircraft Systems (RPAS) by IATA. IATA has also collaborated closely with ICAO, civil aviation authorities and key industry partners to develop a toolkit that

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provides states with operational guidance and regulations in order to ensure the safe and efficient integration of Unmanned Aircraft Systems (UAS) into shared airspace.

The Indian aviation industry is on a high-growth trajectory with India likely to become the third- largest aviation market by 2020. With over 700 aircrafts ordered by scheduled carriers, India will need at least 7000 pilots and 1500 cabin crew over the next few years. All these factors combined will lead to a sharp spike in demand for trained aviation personnel from pilots to aircraft maintenance engineers to cabin crew members and airport staff. Indian carriers are projected to increase their fleet size to 1,100 aircraft by 2027. It is expected to cater 520 million passengers by 2037. This also means that newer and better airports and airport operation systems are required to facilitate this increasing numbers and cannot be done fully without automation of certain operations which require less manpower. This will also reduce the time taken for the entire process so that cost effectiveness can be measured through using this latest drone management.

OVERVIEW OF RPAS (REMOTELY PILOTED AERIAL SYSTEMS)

ICAO explains this term as an unmanned aircraft which is piloted from a remote pilot station. RPAs are expected to be integrated into the air traffic management system equally as manned aircraft. These are controlled by real-time piloting control provided by a licensed remote pilot. ICAO also states that an unmanned aircraft is an aircraft intended to be flown without a pilot on board to control its operations. The management of this system is called as Remotely Piloted Aerial Systems Management (RPASM). RPA management consists of two major components for operation. Human- operated remote pilot station usually located on the ground or on a ship, but which may be aboard another airborne platform. A command and control system sometimes called as communication, command and control system that includes data links and other system elements (e.g. instruments and transponders on satellites and/or terrestrial cable networks) that connect the remote pilot stations to the RPA.

Emergency Response

Emergency response being a cyclical process is usually performed by a plan called as Emergency Response Plan (ERP). This varies from industry to industry and from organisation to organisation. In airports, it is called as Airport Emergency Plan (AEP) which helps to deal with an emergency or a disaster. A typical airport emergency plan involves several different components and is usually created and implemented by either the airport manager or an emergency response coordinator. There are also several parties which are involved in the creation and execution of an AEP. Few important personnel involved include Airport Emergency Response Coordinator, Airport Rescue and Fire Fighting Crews, Airport Security team, Air Traffic Control, local authorities (Whitaker & Corson, 2017).

Proposed Idea

Currently AEP systems are handled mostly by human resources. This has more control but when the airports get bigger and technologically advanced, much more advanced and automated AEPs are required to cater to the needs. So this report proposes a new system, where RPAS are used as a part of AEP. The capabilities are the current world drones are limited and require more skilled labour to operate these systems, so this report focuses

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mainly are four major areas where the current generation drones can be used effectively in AEP. They are:

1. **Fire fighting services:** Drones because of their high flexibility and ability to fly at high altitudes and ability to reach places which cannot be normally accessed by human personnel, can be used to control the fire inside the airport and also used to handle fire on the runaways or tarmacs in case of an accident or incident (Dove et al., 1982).
2. **First aid assistance:** Drones are highly effective because of their speeds and agility to fly within confined spaces. This makes drones highly capable of delivering first aid assistance to various situations inside the airport. This includes delivery of timely first aid equipment's and basic first aid instructions to public at the place of incident where the authority hasn't reached yet, reporting of an emergency situation to the first aid assistance unit
3. **Visual aid:** Drones are known for their ability to provide visual aid. This starts from basic surveillance to complex situation analysis. In case of Fire Fighting Services, Drones can be equipped with thermal scanners to assess the intensity of fire. In case of First Aid Assistance, Drones which are circulated within the airports can detect and report incidents or accidents which occur in the airport.
4. **Cost optimisation tool**: Drones will help us in revenue maximisation by lowering the risk of incidents which is pathbreaking solutions for handling airport maintenance and operation swiftly.

Objectives for the Study

1 To create cost effective automated system to assist the AEP personnel in supporting the operations of emergency response in airports in India using drone technology known as Remotely Piloted Aerial Systems (RPAS).
2 To provide much quicker and timely response to the situation and to ensure that no incidents are left without a response to it. It will save the cost of operations and enhance the profitability of the airport management.
3 To improve the skills of the AEP team who handle the situation.
4 Lowering the risk of accident and maximising the revenue operations for aviation business.

Scope of the Research

The Aviation business is a dynamic industry which suffers from new types of incidents and accidents every day. Even with constant record keeping and improvements, still the existing systems suffer from a wide range of limitations and poor emergency responses. There have been several incidents and fatal accidents where proper emergency response wasn't there and there is huge loss of assets without optimisation of cost. The global aviation world is fast developing and India being a developing country requires much more advanced emergency response systems. Due to globalisation, large number of passengers and cargo are being transferred from the country to the global as well as vice versa, this increases the need of more number of airports and also shortage of skilled staff to handle the situations. This paves a way for RPAS to be used for AEP in India. This will reduce the amount of manpower required to foster the increasing demand of skilled staff as RPASM requires very less staffing. RPAS have also been found to be more efficient in various scenarios like first aid assistance, firefighting services and also providing better visual aid. RPAS also reduces the time and effort in performing the emergency response.

Implementation Process

The proposed idea has 4 major areas of focus and there are drones available which can cater to these areas from fire fighting services to first aid assistance to visual aid. This

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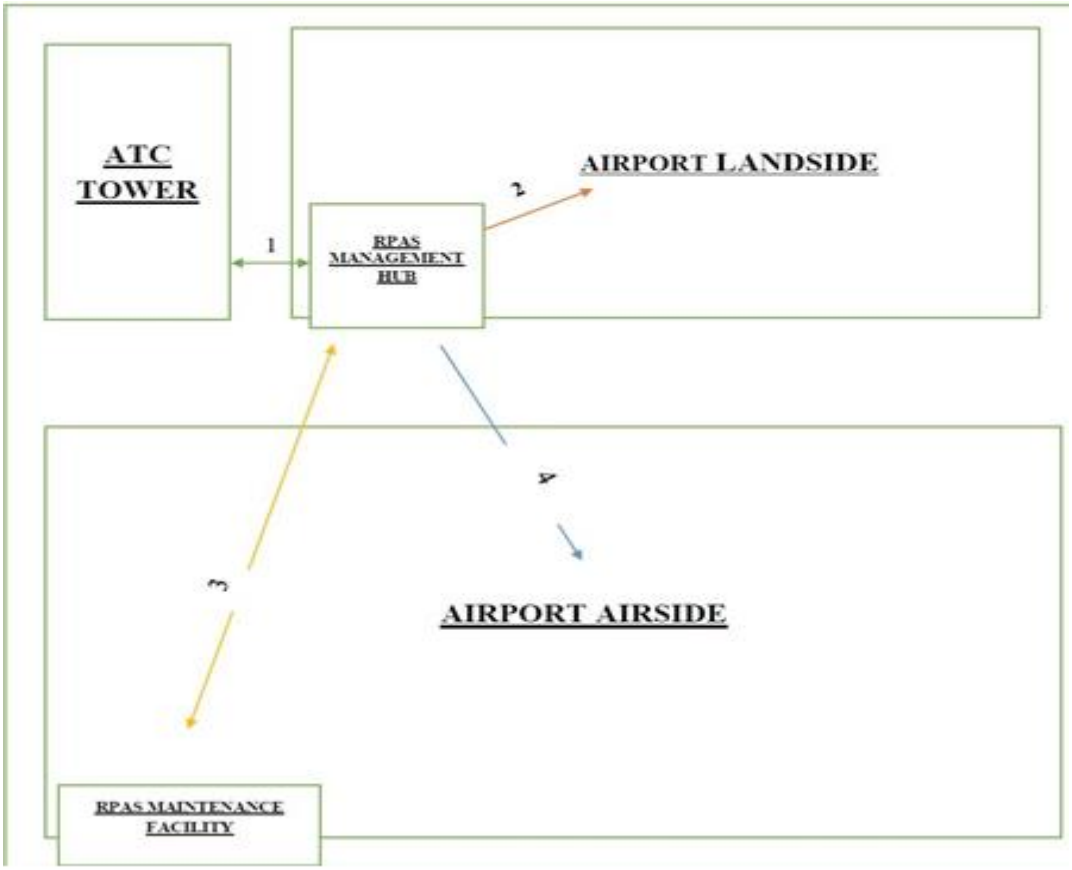
implementation process involves a centralised hub inside the airport which acts a control and communication hub for managing all the drones performing various operations within the airport. This is highly required as airports act as a centre for incoming and departing flights and without a proper control, it will lead to huge accidents and losses. With the hub providing centralised control, the drones are now deployed to take care of the different type of service required to cater to the needs. The central hub also coordinates with the air traffic control to ensure that there is difference between the manned aerial systems and unmanned aerial systems. This hub can be placed at airports itself, as the focus is more on emergency response at airports (Clarke & Moses, 2014; Laszlo et al., 2018).

IMPLEMENTATION FLOWCHART



The proposed implementation flowchart is mentioned in the above picture and the arrow representation is mentioned below:

A.NO	ARROW REPRESENTATION
1	Communication between ATC and RPASMH
2	RPASMH drone deployed to airport landside operations
3	RPASMH drone deplored to airport airside operations
4	Drones constant inspection and maintenance

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Flowchart Explanation

The above flowchart contains the important existing facilities of the airport and how the proposed system is implemented by introduction of new facilities and specific operations performed. The explanation part consists of two divisions (Van de Voorde et al., 2017). They are:

1 Facilities present
2 Operations Performed

Facilities Present

There are 3 major existing facilities and 2 new facilities proposed. They are:

1 **Airport landside**: Landside area is the main terminal of the airport. It includes facilities like parking lots, public transportation, train stations and access road. It also includes facilities like ticketing, passenger lounges, duty free shops, customs and checking etc. The landside area is open to the public, while access to the airside area is tightly controlled.
2 **Airport airside**: Airside area is the most important area of airport facility which includes all areas accessible to the aircraft. It includes runways, taxiways, aprons, ramps etc. Passengers on commercial flights access airside areas through the terminals after checks.
3 **Atc tower**: It is a facility which provides air traffic control. It is a service provided by ground- based air traffic controllers who direct aircraft on the ground and through controlled airspace, and can provide advisory services to aircraft in non-controlled airspace. The primary purpose of ATC worldwide is to prevent collisions, organize and expedite the flow of air traffic, and provide information and other support for pilots .
4 **RPAS management hub:** This is a newly proposed facility inside the landside of the airport which also has access to the landside. This facility acts as a central hub from which the drones are deployed and controlled. This facility also acts as a parking bay for the drones. This facility takes a small space as it has only three main rooms and also drones are smaller devices and does not require much space. One for communication, one for charging of drones and one for drones which are ready for deploying. This facility is connected to RPAS Maintenance Facility in the Airside of the airport.
5 **RPAS maintenance facility**: Just like the hangars of the airport which enables inspections and maintenance of aircrafts, RPASMF is a newly proposed facility which will take care of the inspection and maintenance of the drones. This facility houses all the important equipment required for the process with drone maintenance experts. This is present in the Airside of the airport.

Operations Performed

There are 4 major operations happening in this system. They are:

1 Deployment of Drones from RPASMH to tackle emergency situations within the landside of the airport.
2 Deployment of Drones from RPASMH to tackle emergency situations in the airside of the airport.
3 Constant communication with the ATC from RPASMH on the operations of the drones.
4 Deployment of Drones for maintenance and inspection from RPASMH to RPASMF.

Emergency Response Drones

With the current technology, there is no drone which can facilitate all the 3 areas of focus. But there are drones available which can focus on an individual task and do it in any efficient manner. These drones can be deployed combined to tackle a situation from the

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central hub.

1. **Fire Fighting Drones:** There are two major types of fire fighting drones. First type of drones are drones which carry fire extinguishing equipment's as payload with them. This type of drones help in putting down small fires and when sudden extinguishing is required to avoid major accidents. This type of drones cannot put out fire for long time as they can carry very less payload. (E.g. Walkera ZHUN fire fighting drone which can carry payloads up to 15kgs). Second type of drones are drones which are attached to fire tender truck which can put out large masses of fire. This type of drones are drones which has a large hose attached to them which can provide water to put out large masses of fire. This type of drones suffer from only one major problem that the amount of time these drones can be operational is very less. (E.g. Aerones fire drone which was developed in Latvia which does the similar function).
2. **First Aid Assistance Drones:** These are drones which specialised in providing first aid assistance. This also has two types of implementation. First type of drones are drones which has come first aid equipment and basic instructions to the public to handle emergency situation. This is highly useful when the medical staff are far away and emergency assistance is required. This system lacks in limitations on the type of assistance given. (E.g. Tu Delft ambulance drone. This drone has the ability to provide basic health assistance like Cardiopulmonary Resuscitation (CPR), Automated External Defibrillator (AED)). The second type of drones here are drones which can carry individuals to the first aid bays. These drones are currently not available but will be available in future just like drone taxis.
3. **Visual Aid Drones:** These drones perform a function close to overall management. Here Visual Aid can be given by both fire fighting and first aid assistance drones by simply adding a visual aid payload to the drones. These payloads can be thermal scanners to detect the amount of fire, Night vision cameras in case of power failure, Hazardous material detection etc. As the drones used for fire fighting and first aid assistance focus more on their operation and with the limited range of drones. These payloads can be fitted to a drone which solely caters to the visual aids. (Payload company examples can be DJI, DSLR etc.).

Features of the Proposed System

The proposed system implements a newer system to aid the existing system in the process of emergency response. This system has to co-ordinate with the existing system to ensure that there is no gaps left. The newer system also bridges the communication gap between the various departments of emergency response plan, AEP of an airport. This comes with a range of areas to be grown which are described below (Bamburry, 2015).

Areas of Growth

1. Since drones use GPS (Global Positioning System), they can be programmed and maneuverer accurately to precise locations.
2. They are able to fly lower and in more directions, allowing them to easily navigate traditionally hard-to-access areas especially most crowded airports.
3. Drones use sensors for their positioning and movement so it is less likely to stall and crash making it safer inside airport.
4. Drones tolerate wider environmental ranges – The drones are able to tolerate greater ranges of pressure, temperature and time etc.
5. They can carry multiple payloads to perform various functions at a time to handled tough situations.
6. As they are small and less in weight, the operation costs are less as they can be battery operated or with minimal fuel.

Areas to Grow

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1. Drones are smaller air vehicles so they can carry only lesser weight, this makes its capabilities are limited.
2. Drones are operated on batteries or with lesser fuel so the operational time is very less and requires constant charging.
3. Highly limited by legal regulations for its operations with federal laws and state laws being different.
4. Very High Initial setup cost, as it involves creation of facilities with complex technologies.
5. Resistance to change – for traditional emergency response team to adopt this new system.
6. Prone to hacking – which may turn disastrous.

LITERATURE REVIEW

Layton (1976), considering the in depth study which relates apt to this study resulted that Remotely Piloted Research Vehicle (RPRV) using a 3/8 scale model of an F-15 airplane, to determine the usefulness of the RPRV testing technique in high risk flight testing, including spin testing, were presented. The program showed that the RPRV technique, including the use of a digital control system, is a practical method for obtaining flight research data. The spin, stability, and control data obtained with the 3/8-scale model also showed that predictions based on wind-tunnel tests were generally reasonable. Hassanalian & Abdelkefi (2017) identified that there is a growing need for flying drones with diverse capabilities for both civilian and military applications. There is also a significant interest in the development of novel drones which can autonomously fly in different environments and locations and can perform various missions. In the past decade, the broad spectrum of applications of these drones has received most attention which led to the invention of various types of drones with different sizes and weights. In this review paper, they identified a novel classification of flying drones that ranges from unmanned air vehicles to smart dusts at both ends of this spectrum, with their new defined applications.

Clothier et al. (2015) identified in their research that unmanned aircrafts or drones are acting as emerging sector in aviation industry. This article presented the results from two surveys of the Australian public designed to investigate

1. Whether the public perceive drones to be riskier than existing manned aviation.
2. Whether the terminology used to describe the technology influences public perception.
3. What the broader concerns are that may influence public acceptance of the technology.

Rao et al. (2016), acknowledged that the use of drones in commercial applications has the potential to dramatically alter several industries and in the process, changes attitudes and behaviours regarding their impact on daily lives of human beings. The emergence of drones challenges traditional notions of safety, security, privacy, ownership, liability, and regulation. In parallel, drones have been legitimized by regulations and licenses from federal agencies, are used by companies for surveying, inspecting, and imaging, and their technological development are driven by active communities of hobbyists and enthusiasts.

Tauro et al. (2016) found that drones are transforming the way we sense and interact with the environment. This first instance of quantitative water flow sensing from a flying drone paves the way to novel observations of the environment. Wang et al. (2017) in their research outcome has introduced a new system known as the Vehicle Routing Problem with Drones (VRPD). The objective was to minimize the maximum duration of the routes (i.e., the completion time). Wang et al. (2017) identified that Unmanned Aerial Vehicles (UAVs) have been widely used in both military and civilian applications. However, the cooperation of small and mini drones in a network is capable of further improving the performance and

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the coverage area of UAVs.

Wang et al. (2013), presented a design idea on the emergency management system for civil aviation airport based on Semantic Web, and implements alarm answering, information notifying, rescue plan generating and releasing, rescue condition monitoring and plan adjustment through the management of civil aviation airport emergency management domain ontology, rule base and inference engine, and which provides aid decision making from data layer, semantic layer to application layer for civil aviation airport emergency management with strong technological and methodological support.

Khan & Neustaedter (2019) found that in the near future, emergency services within Canada will be supporting new technologies for 9-1-1 call centres and firefighters to learn about an emergency situation. One such technology is drones. Their results show that drones have numerous benefits to both firefighters and 9-1-1 callers which include context awareness and social support for callers who receive feelings of assurance that help is on the way. Privacy was largely not an issue, though safety issues arose especially for complex uses of drones such as indoor flying. Their results also point to opportunities for designing drone systems that help people to develop a sense of trust with emergency response drones, and mitigate privacy and safety concerns with more complex drone systems.

Research Methodology

This is a secondary research which focuses mainly to improve the performance of the existing system and also this research is a new proposal study exclusively based on secondary data analysis with the support of various research done earlier.

SWOT Analysis

Strength, Weakness, Opportunities and Threat is considered for this study since it is a proposed system which is completely new to India.

STRENGTH	WEAKNESS
Drones are light and easy to manoeuvre which maCkes it easy to access taller or difficult areas of the airport.	Unlike commercial planes or land vehicles, Drones cannot carry larger payloads, this limits their capabilities.
Drones have lesser maintenance cost as they involve very little equipment and also faults can be easily found.	RPASM requires highly skilled operators to handle the drones as there are no personnel inside the drone.
Drones have increased service responsiveness as they can cater to wide range of emergency situations from one central hub. Drones require less operational expenses as it requires just a smaller amount of charge and one operator can handle many drones.	It involves creation of new facilities and setups, so it has high initial investment cost. Though landside operations would not be affected by weather conditions, operations on the airside are largely dependent on the weather conditions.
OPPORTUNITIES	**THREATS**
Emergency Response can be performed in challenging areas without a major hustle.	State laws and Federal laws of drones are different, so highly limited by legal regulations at the moment.
Provides a new dimension in emergency response by automating the emergency response process. Delivery of basic first aid assistance can be made without requirement of actual medical staff at the sight	• Prone to hacking, even emergency response systems can be hacked for harmful purposes in case of terrorist attacks. • Accidental damages are high when it occurs

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of accident.	especially over large crowds and also over important areas of the airport such as customs area or areas where there are more fragile products.
Centralised Unit for all types of emergency response rather than individual units.	Drones can malfunction if the communication lines are cut by unfortunate happenings and also electromagnetic pulses.

Comparitive Analysis

India being a developing country and on a track to become the largest aviation hub, there is a need to improve the standards and performance of airports which lack far behind the global airports in terms of technology and operations. As with the various development plans initiated, emergency response is also a major factor to be considered in aiding the development process. This research involves a proposal of new system which will increase the performance of the existing system in India, so a comparative analysis on how the proposed system is better is given below:

EXISTING SYSTEM	PROPOSED SYSTEM
All the units of the emergency response team of Indian airports are independent and are at different locations of the airport.	A centralised hub is present to unify all the different units under one main hub.
Indian airports lack proper communication between the various units, thus increasing response times caused largely due to poor communication lines.	As all units are present in one hub, communication is proper and response times are reduced.
Emergency response process is performed by humans, where the human errors contributing to accidents in 80%.	Emergency response process is handled by drones, so the error rates are relatively lesser compared to manned systems.
India lacks in man power in aviation sector and current emergency response requires more man power and organisational flow.	As many drones can be operated by few personnel, man power requirement is lesser
Error reduction is slow and it is very hard to find who is responsible in case of major flaw in the system.	It is easy to track which drone is responsible for the error.
The time taken to reach the sight of incident or accident is high due the lack of proper vehicles in India.	As drones are fast and agile, they can reach the sight in much faster speed.

Proposed Factor Analysis

The proposed system involves automation which are subjective to certain set of dependent and independent variables. Dependent variables are variables which are very crucial for the implementation of the proposed system. Independent variables are variables which though does not have a direct impact on the system affects the system in some other way.

Dependent Variables

1. **Communication**: Drones operate based on the communication with the central hub and the overall operations is also in sync with ATC, so communication is very essential in drones operation.
2. **Navigation**: Drones are operated from remote stations (in this case central hub) so it does not involved a personnel to be present inside to operate the drone, this makes the navigation sensors like

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GPS as crucial dependent factor.

3. **Equipment**: Equipment in the system refers to the drones itself and the supporting equipment's like payloads and communication devices act as a dependent factor.
4. **Legal regulations**: As with normal manned aerial systems, unmanned aerial systems also operate under legal regulations, so satisfying all the legal norms is very essential.

Independent Variables

1. **Weather**: Though drones operating inside the landside of the airport is not affecting by weather, drones when deployed to the airside of the airport, its operations are largely dependent on the weather conditions.
2. **Land terrain**: An airport consists of various floors and different types of layouts and also its airside sometimes have varied terrains, so drones need to be fitted with sensors to keep this in track in order to avoid collisions due to non-detection of terrain.
3. **Human factors**: Though a large part of RPAS is performed by automation, it still involves human personnel to operate these drones. So human factors also play a part in drone operations.
4. **Obstacles**: An airport has lot of facilities and equipment's' in both landside and airside, the drones should sense them and avoid collisions with them. So obstacles are also a factor for the operation of the drones.

Research Insights

The research conducted based on the study of various existing systems and systems which can be implemented in terms of research papers, journals and web pages, led to a series of findings and suggestions which can help aiding the process of formation better AEP system. These will help Indian airports to get technologically advanced to handle the various emergency situations.

1. There is no centralised hub for emergency response in Indian airports, all the units like fire and rescue and medical assistance are at different places of the airport and also they lack automation which improves the efficiency of the overall system.
2. Manned vehicles and manned emergency response is less effective and are limited by the layout of airport building facilities.
3. When it is the peak time of operations, emergency response units as they are independent, lack coordination.
4. Only aircrafts are constantly checked for errors, very less concentration is given to the facilities of airport to ensure that precautions are taken.
5. Maintenance and monitoring is very limited and often overseen.
6. Public perception towards airports are that airports are still prone to post major threats to life because of the various incidents and accidents that constantly occur at airports.
7. More lives are lost and financial losses are also high.
8. The response time for an accident or incident is very high.
9. There is no proper communication between the various units of the emergency response team.
10. There is very little responsibility taken by the various units of the emergency response team in case of an accident or incident.
11. Communication gaps often lead to cause of another major accident when there is no response for happenings.
12. India airports are far behind in terms of skilled labour for advanced emergency response.
13. The available technologies are also very less capable in handling different types of situation so the skillset is also reduced.

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SUGGESTIONS

1. The proposed system creates a new centralised hub which interlinks all the departments of emergency response in Indian airports and also has an automated system using drones to handle situations.
2. Drones are known for their ability to fly in confined spaces and their ability to move faster. This makes the drone more effective and operate smoothly.
3. Drones are controlled from the central hub, so the coordination of various departments is improved.
4. Visual aiding drones help in constant monitoring of the airport premises for errors or faults which can lead to any incident or accident.
5. As drones require less operation cost, monitoring of premises is not taken for granted and done precisely.
6. As drones are more effective in handling various situations, the public perception towards airport safety will change in a span of few years.
7. More lives can be saved and financial losses can be reduced to a larger extent by the proposed system due to its dynamic response.
8. Drones largely rely on communication lines and since drones use efficient communication lines and also as the central hub co-ordinates with ATC, there is proper communication network.
9. Since each drone is assigned with a certain task, error detection is very simple and easily fixable.
10. As the communication network is proper and there is constant monitoring, no happenings are left unattended.
11. Drones do not require much manpower as it depends mostly on automation, so this reduces the requirement of more skilled labour.
12. Though the manpower is less, they are highly skilled so they can handle different types of situations with the help of drones.

CONCLUSION

Marketing of emergency response handling is in nascent stage in India and India is developing at a high growth rate due to globalisation and the Indian Aviation Industry is growing at an excellent rate. The marketing aspects of aviation industry has to be studied further to handle the management of Drone which is super saver in terms of cost for airport operations. Huge gain in terms of revenue optimisation has been seen in handling emergency responses using drone and it will change the entire landscape of the aviation industry. Lack of proper technical infrastructure is keeping Indian airports at bay so the process of becoming an efficient global hub, Indian airports need to be technologically advanced and implement systems like automation. Emergency response marketing automation has to be studied further in terms of business expansion of aviation industry. Huge cost has been at stake when any incident has too happened at airport, so we must do the marketing of drone management which is one of the latest technical infrastructures to handle the emergency Response in airports. Currently the drones' capabilities are highly limited, and they suffer from public perceptions about it and legal regulations, but they are highly capable of doing the limited operations they perform. Marketing insights for mobile hospitals which are present in airport must be studied further so that it will benefit health care industry as whole. Drones can be equipped with a large array of payloads which assist in first aid services from basic first aid instructions to defibrillation to save lives. It will be perfect marketing tool for health care industry which is futuristic approach to cut the cost and save the time.

Future Research Study

1. The proposed system is a completely theory-based study, practical implementations of the system can

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be performed.

2. Marketing & Financial study to implement the system can be studied as the system will involve high initial setup cost.
3. Legal Study to get permissions for the system can be studied as both state and federal laws have to be followed.

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