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SURVEY PAPER ON THE APPLICATION OF IOT

(IOT IN AEROSPACE)

UNDER THE SUPERVISION OF

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1. ABSTRACTION

A comprehensive survey of how IOT is related to everything in day today life. As we all know IOT (internet of things) is growing day by day it's showing a rapid growth in our several industries like mechanical, automobiles, information technology and several more. Its also increasing rapidly because of its usability, adaptability, and smartness. And we are already aware about it that how iot works without the interference of humans it operates automatically with several commands given by the user. Creating devices with using iot can reduce human workforce and also smart machines will be crafted by the experts and the scientists using their brain in multiple fields like **IOT IN AERTOSPACE, IOT IN CYBER SECURITY, IOT IN HUMAN COMPUTER INTERACTIONS, IOT IN 5G NETWORKING, IOT IN VIRTUAL REALITY AND AUGMENTED REALITY** and many more. This paper focuses on how we can increase the use iot in updating technologies we have now. It offers valuable insight for researchers for this field. this survey paper review and synthesize current aspect for *aerospace.*

2. INTRODUCTION

The integration of IoT into the aerospace industry is a major development in the fields of space exploration and aeronautics. IoT provides a range of benefits through the collection, transfer, and analysis of real-time data through

the use of networked equipment and sensors. This technology is essential to enhance operational effectiveness, optimise maintenance, and enhance safety in the aerospace sector. Examples of how IoT solutions can help aerospace professionals make informed decisions, reduce downtime, and ensure the dependability and security of complex systems are outlined below. This introduction provides the foundation for a more in-depth analysis of the significant impact that IoT has had on the aerospace industry.

3. LITERATURE SURVEY

➢ WHAT IS AEROSPACE

In aerospace we are going to discuss the usage of IOT in the aerospace industry about how it can be used to assure the safety of people, security reason and automation of traffic control in ATC (air traffic control) and it will also help us to get all the information about the flights we are getting in. And it will help us to reduce man work in the field as well as on the table. In aerospace we can also use IOT for creating boarding passes and allocation for tickets and all the stuff that we have to do manually

➢ IOT IMPLEMENTATION

There are several ways in which we can implement IOT in aerospace. There are few characteristics such as Intelligence, Computing/Processor, Cognition, and Security have high potential for IoT implementation in aerospace systems. These characteristics have scored a relative weight above 4 in the House of Quality (HoQ) analysis and are considered favorable for IoT systems/products in the aerospace industry. It define objective and sesnsors integration, data connectivity and analysis and also it include cybersecurity. And it protect data from unwanted malwares and viruses. To increase productivity and reduce downtime, integrate Internet of Things technology with the current aeronautical infrastructure and management software.To guarantee accuracy and dependability, thoroughly test IoT devices in a variety of real-world settings, such as severe weather and turbulence.The aerospace sector has the potential to leverage the Internet of Things (IoT) to boost productivity, cut expenses, and increase the safety and functionality of aeroplanes and spacecraft.

➢ SAFETY CONCERN ON IMPLEMENTING IOT IN AEROSPACE.

Because the integration of IoT devices and systems presents new potential dangers and vulnerabilities, safety is a top priority when deploying IoT in aircraft. Any safety compromise can have dire repercussions in the aerospace sector, where safety is the top priority. IoT devices in aircraft systems have the ability to communicate with other systems, gather and send sensitive data, and manage vital operations. Thus, protecting the security and safety of Internet of Things devices and the data they manage is essential to averting malicious attacks, system failures, illegal access, and data breaches. Aerospace firms may reduce risks and preserve the integrity and dependability of their systems by giving safety top priority while implementing IoT, thereby guaranteeing the safety of passengers, crew, and the aviation ecosystem as a whole.

➢ CHARACTERSTICS OF IOT IN AEROSPACE

By offering data on aircraft performance, weather, and other factors, IoT helps optimise fuel use. This lessens the impact on the environment and operating costs.The enormous volumes of data gathered by IoT devices are analysed using advanced data analytics and machine learning. Making data-driven decisions and streamlining operations are aided by this study. Tight industry guidelines and standards must be followed by IoT

systems in the aerospace sector to guarantee security, dependability, and compliance with regulatory bodies like the Federal Aviation Administration (FAA). IoT deployments must to be planned for scalability in order to handle expanding fleets of aeroplanes or spacecraft. To maximise the use of technology and run IoT systems efficiently, staff members require training. To make the required improvements, IoT systems must be regularly monitored and evaluated.

➤ USE OF CYBERSECURITY IN IOT IN AEROSPACE

The crucial nature of space exploration and aviation makes cybersecurity in the Internet of Things (IoT) extremely important for the aerospace industry. Acknowledge that a variety of cyberthreats, including as malware, denial-of-service attacks, hacking, and data breaches, can affect aerospace IoT systems. For the purpose of creating successful cybersecurity strategies, it is necessary to comprehend the threat landscape.Make that all data sent between IoT systems and devices is encrypted to prevent eavesdropping and interception. To create safe communications, use secure communication protocols such as MQTT over TLS or HTTPS.Before permitting IoT devices to join the network, make sure they are who they say they are. This stops devices that are not authorised or hacked from accessing vital systems.

4. CONCLUSION:

In summary, the Internet of Things (IoT) is a revolutionary force that has the potential to completely change a wide range of industries, including manufacturing, aerospace, healthcare, and agriculture. IoT technology has the potential to improve people's lives all around the world by increasing productivity and enabling data-driven decision-making. Nevertheless, there are obstacles in the way of utilising IoT to its full potential, particularly with regard to security and privacy. IoT ecosystems must strike the correct balance between security and connectivity in order to remain resistant to cyberattacks. Collaboration, creativity, and a strong emphasis on ethical and secure deployment will be crucial as we enter the IoT era. Although this technology has the potential to lead to previously unheard-of breakthroughs, it must be used responsibly.