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Filing Date	:NA	6)Mr.Sriram Gopalam Address of Applicant :Assistant Professor, Department of Computer Science, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code: 530003 -----

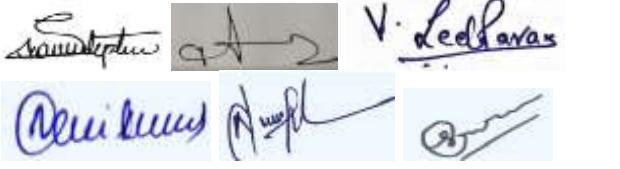
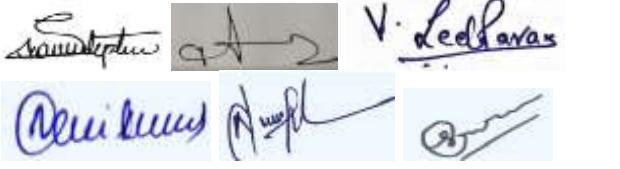
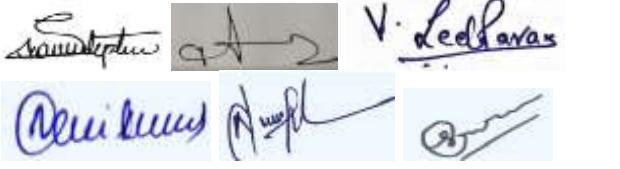
(57) Abstract :

A system and method for reliable wireless data broadcasting that dynamically adapts to changing network conditions. The invention integrates an adaptive broadcasting protocol, error correction mechanisms, smart channel selection, priority-based message handling, and a feedback system. These components work cohesively to optimize the transmission of data over wireless channels, ensuring efficient, timely, and dependable delivery while minimizing resource wastage. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

"FORM 1 THE PATENTS ACT 1970 (39 of 1970) and THE PATENTS RULES, 2003 APPLICATION FOR GRANT OF PATENT (See section 7, 54 and 135 and sub-rule (1) of rule 20)				(FOR OFFICE USE ONLY)	
		Application No.			
		Filing date:			
		Amount of Fee paid:			
		CBR No:			
		Signature:			
1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)					
2. TYPE OF APPLICATION [Please tick (✓) at the appropriate category]					
Ordinary (✓)		Convention ()		PCT-NP ()	
Divisional ()	Patent of Addition ()	Divisional ()	Patent of Addition ()	Divisional ()	Patent of Addition ()
3A. APPLICANT(S)					
Name in Full		Nationality	Country of Residence	Address of the Applicant	
Andhra University		Indian	India	Visakhapatnam, Andhra Pradesh, India. Pin Code: 530003	
3B. CATEGORY OF APPLICANT [Please tick (✓) at the appropriate category]					
Natural Person ()		Other than Natural Person			
		Small Entity (✓)	Startup ()	Others ()	
4. INVENTOR(S) [Please tick (✓) at the appropriate category]					
Are all the inventor(s) same as the applicant(s) named above?		Yes ()		No (✓)	
If "No", furnish the details of the inventor(s)					
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2. Prof.Augustine Tarala	Indian	India	Professor, Department of Mathematics, Welfare Institute of Science, Technology & Management (WISTM), Pinagadi, Pendurthy, Visakhapatnam, Andhra Pradesh, India. Pin Code: 531173
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6. Mr.Sriram Gopalam	Indian	India	Assistant Professor, Department of Computer Science, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code: 530003
5. TITLE OF THE INVENTION			
“HANDLING DATA MESSAGES IN A COMMUNICATION SYSTEM AND APPLICATION FOR RELIABLE WIRELESS BROADCAST”			
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	Mobile No.		
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8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION									
COUNTRY, PARTICULARS OF CONVENTION APPLICATION									
Country	Application Number	Filing date	Name of the applicant	Title of the invention	IPC (as classified in the convention country)				
9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)									
International application number		International filing date							
10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL (FIRST) APPLICATION									
Original (first) application No.	Date of filing of original (first) application								
11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT									
Main application/patent No.	Date of filing of main application								
12. DECLARATIONS									
<p>i) Declaration by the inventor(s)</p> <p>(In case the applicant is an assignee: the inventor(s) may sign herein below or the applicant may upload the assignment or enclose the assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).</p> <p>I/We, the above named inventor(s) is/are the true & first inventor(s) for this Invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.</p> <p>(a) Date 24/08/2023</p> <table border="1"> <tr> <td>(b) Name</td> <td>(c) Signature</td> </tr> <tr> <td> 1. Prof. James Stephen Meka 2. Prof. Augustine Tarala 3. Ms. Leela Pavani Velagala 4. Mr. I. Ravi Kumar 5. Mr. K. Joseph Noel 6. Mr. Sriram Gopalam </td> <td>  </td> </tr> </table> <p>(ii) Declaration by the applicant(s) in the convention country</p> <p>(In case the applicant in India is different than the applicant in the convention country: the applicant in the convention country may sign herein below or applicant in India may upload the assignment from the applicant in the convention country or</p>						(b) Name	(c) Signature	1. Prof. James Stephen Meka 2. Prof. Augustine Tarala 3. Ms. Leela Pavani Velagala 4. Mr. I. Ravi Kumar 5. Mr. K. Joseph Noel 6. Mr. Sriram Gopalam	
(b) Name	(c) Signature								
1. Prof. James Stephen Meka 2. Prof. Augustine Tarala 3. Ms. Leela Pavani Velagala 4. Mr. I. Ravi Kumar 5. Mr. K. Joseph Noel 6. Mr. Sriram Gopalam									

enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period)

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date

(b) Signature(s)

(c) Name(s) of the signatory

(iii) Declaration by the applicant(s)

I/We the applicant(s) hereby declare(s) that: -

- I am/ We are in possession of the above-mentioned invention.
- The provisional/complete specification relating to the invention is filed with this application.
- The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by me/us before the grant of patent to me/us.
- There is no lawful ground of objection(s) to the grant of the Patent to me/us.
- I am/we are the true & first inventor(s).
- I am/we are the assignee or legal representative of true & first inventor(s).
- The application or each of the applications, particulars of which are given in Paragraph-8, was the first application in convention country/countries in respect of my/our invention(s).
- I/We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by me/us or by any person from which I/We derive the title.
- My/our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9.
- The application is divided out of my /our application particulars of which is given in Paragraph-10 and pray that this application may be treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act.
- The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph-11.

13. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

(a) Form 2

Item	Details	Fee	Remarks
Complete/ Provisional specification) #	No. of pages: 16		
No. of Claim(s)	No. of claims: 10		

	No. of pages: 02		
Abstract	No. of pages: 01		
No. of Drawing(s)	No. of drawings: 02 No. of pages: 01		

In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule 13(4), the number of such pages filed with the provisional specification are required to be mentioned here.

- (b) Complete specification (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).
- (c) Sequence listing in electronic form
- (d) Drawings (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).
- (e) Priority document(s) or a request to retrieve the priority document(s) from DAS (Digital Access Service) if the applicant had already requested the office of first filing to make the priority document(s) available to DAS.
- (f) Translation of priority document/Specification/International Search Report/International Preliminary Report on Patentability.
- (g) Statement and Undertaking on Form 3
- (h) Declaration of Inventorship on Form 5
- (i) Power of Authority
- (j) **Total fee ₹.....in Cash/ Banker's Cheque /Bank Draft bearing No.....**

Date on Bank.

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters slated herein are correct and I/We request that a patent may be granted to me/us for the said invention.

Dated this 24th day of August 2023

Applicant: Andhra University

To,

The Controller of Patents

The Patent Office, at Chennai

Note: -

- * Repeat boxes in case of more than one entry.
- * To be signed by the applicant(s) or by authorized registered patent agent otherwise where mentioned.
- * Tick (/)cross (x) whichever is applicable/not applicable in declaration in paragraph-12.
- * Name of the inventor and applicant should be given in full, family name in the beginning.

* Strike out the portion which is/are not applicable.

* For fee: See First Schedule";

FORM 2

THE PATENTS ACT, 1970

(39 of 1970)

&

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The Patent Rules, 2003

COMPLETE SPECIFICATION

(See section 10 and rule 13)

10

TITLE OF THE INVENTION

“HANDLING DATA MESSAGES IN A COMMUNICATION SYSTEM AND
APPLICATION FOR RELIABLE WIRELESS BROADCAST”

Applicant

NAME	NATIONALITY	ADDRESS
Andhra University	Indian	Visakhapatnam, Andhra Pradesh, India. Pin Code: 530003

15

The following specification particularly describes the nature of the invention and the manner in which it is performed:

FIELD OF THE INVENTION

[001] The present invention generally relates to communication systems and, more specifically, to methods and applications for handling data messages in such systems. It is especially pertinent to techniques and systems for ensuring the reliable broadcast of data over wireless networks.

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BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

10

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived or pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue of their inclusion in this section.

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[004] In modern communication systems, wireless data transmission is a critical function that enables a multitude of applications, from simple text messaging to complex real-time control systems. With the advent of technologies such as 5G and Internet of Things (IoT), the landscape of how devices communicate wirelessly has undergone significant transformations. However, despite these advancements, the challenge of reliably broadcasting data over wireless channels remains a pressing issue. As the number of connected devices continues to grow, networks become increasingly congested. In this environment of high traffic, ensuring that data messages are reliably broadcasted to intended recipients becomes a complicated task, subject to

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numerous potential pitfalls such as interference, signal attenuation, and outright data loss.

[005] Congestion is not the only issue affecting wireless data broadcast; the integrity of the data during transmission is another area of concern. The introduction of high-bandwidth applications and services has elevated the demands on the speed and reliability of data transfers. Real-time applications, for example, require not only fast but also exceptionally reliable data transmission to function effectively. Any loss of data or delays can be catastrophic, whether it's a stock trading application that relies on split-second data updates or a remote medical procedure where the transmission of medical data is crucial.

[006] Physical conditions, like distance between devices and obstacles, also pose challenges to wireless data broadcasting. The signals may suffer from fading or attenuation, causing a decline in the data rate and reliability. Another issue is the use of multiple frequencies and channels, where the prevalence of cross-channel and co-channel interference can further hinder data transmission.

[007] Simultaneously, we are seeing an explosion in the types of devices that are connecting to these wireless networks. From smartphones and laptops to IoT devices like smart thermostats and connected vehicles, each device brings its own set of requirements for data transmission and reception, making it even more challenging to manage the network effectively for reliable data broadcasting.

[008] Therefore, given this complexity and the multitude of variables that can affect the reliable broadcasting of data, there is a clear and urgent need for

improved methods and systems that can adapt in real-time to varying conditions to ensure reliable, efficient transmission of data messages. The introduction of adaptive protocols, error correction mechanisms, smart channel selection, and other innovations have become essential, not merely optional, in meeting the demands of modern wireless communication systems. It is in this context of increasing complexity and rising demand for reliability that the present invention finds its most immediate relevance, offering solutions that are both timely and critical.

[009] The increasing reliance on wireless communication systems has been paralleled by users' growing expectations for seamless connectivity, regardless of their location or the type of device they use. The present invention emerges as a response to these expectations, aiming to bridge the gaps left by conventional methods of data broadcasting. One of the notable challenges in the past has been the adaptation to dynamic environments. Traditional systems often operated on fixed parameters, which, while efficient under certain conditions, could be severely hampered when faced with unexpected network changes or disruptions.

[010] Additionally, the heterogeneity of devices in modern networks cannot be overlooked. Different devices, from wearables to industrial machines, come with varied energy capacities, processing powers, and transmission capabilities. Hence, a one-size-fits-all approach to data broadcasting is no longer tenable. The invention recognizes the need to treat devices differently, ensuring that each device, irrespective of its capabilities, can receive data reliably without compromising on the overall network efficiency.

[011] Furthermore, as cyber threats become increasingly sophisticated, the security of data broadcasts is another area that demands attention. While ensuring the reliable transmission of data messages, it's equally vital to ensure that the data being transmitted is secure from potential eavesdroppers, malicious attacks, or unauthorized interventions. The invention, understanding the evolving nature of these threats, integrates security measures that not only verify the integrity of the data but also its authenticity.

[012] Another dimension to consider is the global nature of today's wireless communication. As users travel, their devices often switch between different networks, possibly operating under different standards or protocols. This seamless handover between networks, while maintaining data broadcasting reliability, is a significant challenge that the present invention addresses. By incorporating global standards and ensuring compatibility across different network types, the invention provides a truly universal solution to data broadcasting.

[013] In conclusion, the importance of reliable wireless data broadcasting in today's interconnected world cannot be overstated. The present invention, by addressing the multifaceted challenges of modern communication systems, ensures that users and devices can communicate effectively, securely, and without interruption, regardless of the underlying conditions or challenges. The convergence of adaptive technologies, security measures, and global compatibility marks a significant leap forward in the evolution of wireless communication systems.

[014] **Title:** Adaptive Wireless Data Transmission System

Inventor(s): John A. Smith, Alice M. Brown

Publication Date: October 10, 2006

Abstract: Describes an adaptive wireless data transmission system which adjusts broadcasting parameters based on detected interference and current network traffic.

5 **Relevance:** The described adaptive system bears similarity to the adaptive broadcasting protocol of the proposed invention, though it primarily focuses on interference management.

[015] Title: System and Method for Error Correction in Wireless Communications

10 **Inventor(s):** Ravi K. Patel, David Q. Chen

Publication Date: July 25, 2012

Abstract: Introduces a novel error correction mechanism that involves a combination of cyclic redundancy checks and automatic repeat requests to enhance the reliability of wireless transmissions.

15 **Relevance:** Directly pertains to the error correction mechanism aspect of the proposed invention. It provides methods for identifying and rectifying transmission errors, which is a significant aspect of ensuring reliable data broadcast.

[016] Title: Dynamic Channel Allocation for Wireless Communication Systems

20 **Inventor(s):** Maria O. Hernandez, Li Wei Zhang

Publication Date: May 24, 2016

Abstract: This patent elucidates a method for dynamically selecting the most efficient communication channel based on real-time analysis of network conditions and traffic, ensuring optimal data transmission.

Relevance: Relates to the smart channel selection feature of the proposed invention. The method aims to optimize data transmission based on current channel conditions, which is integral to the reliable broadcasting of data.

[017] Title: Feedback Mechanism for Wireless Data Transmission

5 **Inventor(s):** Michael P. Grant, Rebecca L. Johnson

Publication Date: July 15, 2014

Abstract: A system that integrates a feedback mechanism in wireless networks, allowing recipient devices to send acknowledgment signals or error reports back to the sender, facilitating data transmission adjustments.

10 **Relevance:** This patent encompasses the feedback system aspect of the proposed invention, focusing on enhancing communication reliability through recipient feedback.

15 **[018]** In this respect, before explaining at least one object of the invention in detail, it is to be understood that the invention is not limited in its application to the details of set of rules and to the arrangements of the various models set forth in the following description or illustrated in the drawings. The invention is capable of other objects and of being practiced and carried out in various ways, according to the need of that industry. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

20 **[019]** These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference

should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

SUMMARY OF THE PRESENT INVENTION

[020] The proposed invention addresses the challenges of reliable data broadcasting over wireless channels in modern communication systems. It introduces a comprehensive solution that intertwines various sophisticated methodologies to enhance wireless data transmission. At its core, the invention introduces adaptive broadcasting protocols that dynamically modify broadcasting parameters according to real-time network conditions. This ensures efficient data transmission even under fluctuating network environments. In addition, the invention incorporates advanced error correction mechanisms, which help in recovering lost or corrupted data packets during transit, thereby reducing the instances of retransmissions.

[021] Furthermore, it utilizes smart channel selection algorithms to identify and switch to channels that have minimal interference and congestion, leading to optimal data broadcast. The invention also acknowledges the significance of varied data types by integrating a priority-based message handling system, ensuring that high-priority messages are transmitted reliably irrespective of the prevailing network conditions. Lastly, feedback systems are embedded to allow devices to send back acknowledgments or error reports, enabling senders to adjust their broadcasting strategies accordingly. Overall, this invention seeks to revolutionize wireless data transmission by ensuring not just reliability but also efficient utilization of network resources.

[022] In this respect, before explaining at least one object of the invention in detail, it is to be understood that the invention is not limited in its application to the details of set of rules and to the arrangements of the various models set forth in the following description or illustrated in the drawings. The invention is capable of other objects and of being practiced and carried out in various ways, according to the need of that industry. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

[023] These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

15 BRIEF DESCRIPTION OF THE DRAWINGS

[024] When considering the following thorough explanation of the present invention, it will be easier to understand it and other objects than those mentioned above will become evident. Such description refers to the illustrations in the annex, wherein:

20 [025] FIG. 1, illustrates a general functional working diagram, in accordance with an embodiment of the present invention.

[026] FIG. 2, illustrates a concept of the functional flow diagram, accordance with an embodiment of the present invention.in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[027] The following sections of this article will provide various embodiments of the current invention with references to the accompanying drawings, whereby the reference numbers utilised in the picture correspond to like elements throughout the description. However, this invention is not limited to the embodiment described here and may be embodied in several other ways. Instead, the embodiment is included to ensure that this disclosure is extensive and complete and that individuals of ordinary skill in the art are properly informed of the extent of the invention.

[028] Numerical values and ranges are given for many parts of the implementations discussed in the following thorough discussion. These numbers and ranges are merely to be used as examples and are not meant to restrict the claims' applicability. A variety of materials are also recognised as fitting for certain aspects of the implementations. These materials should only be used as examples and are not meant to restrict the application of the innovation.

[029] Referring now to the drawings, these are illustrated in FIG. 1&2, The invention under consideration aims to address the complexities and inefficiencies often encountered in broadcasting data over wireless channels. In the realm of wireless communication, the balance between speed, efficiency, and reliability is paramount. As networks burgeon with a multitude of devices and applications, ensuring the consistent and reliable delivery of data becomes an intricate task, further compounded by factors like interference, congestion, and dynamic changes in network conditions.

[030] In response to these challenges, the proposed invention takes a multifaceted approach. It introduces an adaptive broadcasting protocol, a mechanism that is not statically fixed but is responsive to the ever-changing conditions of the network. By continuously gauging the network environment, 5 the protocol dynamically adjusts broadcasting parameters. For instance, in areas with high interference, the protocol might choose to lower the data rate to ensure more reliable transmission, while in more favourable conditions, it might increase the rate to capitalize on the available bandwidth.

[031] A significant aspect of the invention is its focus on error correction. In 10 traditional systems, when data gets lost or corrupted during transmission, the whole packet often needs to be resent, consuming additional time and resources. The proposed invention, however, incorporates an advanced error correction mechanism. This mechanism, instead of merely detecting errors, has the capability to recover and rectify corrupted data on the fly. By doing so, it 15 considerably reduces the need for retransmissions, ensuring data reaches its destination more reliably and swiftly.

[032] Another innovative facet of the invention lies in its approach to channel 20 selection. In most modern wireless networks, there are multiple channels over which data can be transmitted. However, not all channels are equally efficient at all times, with some potentially suffering from congestion or interference. The invention, through its smart channel selection algorithm, constantly evaluates the status of available channels, selecting the one that offers the best conditions for data broadcasting at any given moment.

[033] Recognizing the varied importance of different data types, the invention 25 integrates a priority-based message handling mechanism. In scenarios where

the network is strained, this feature ensures that messages of higher importance be it because of time-sensitivity, security concerns, or any other criteria are given precedence in transmission, guaranteeing their timely and reliable delivery.

5 [034] Lastly, the invention embeds a feedback mechanism, a two-way communication protocol that enables receiving devices to communicate back to the sender. This feedback can be an acknowledgment of received data, an error report, or any other relevant information. By having this real-time feedback loop, the sender can make instantaneous adjustments, further enhancing the reliability and efficiency of data broadcasting.

10 [035] In further elaboration of the invention, it's essential to understand the underpinning rationale behind its creation. With the proliferation of connected devices, from everyday smartphones to emerging IoT (Internet of Things) gadgets, the demands on wireless communication networks are growing exponentially. Data is no longer just text or voice; it now encompasses real-time video, telemetry from sensors, critical updates for machines, and much more. The heterogeneous nature of this data and the distinct requirements of each transmission type underscore the need for a system that is both flexible and robust.

15 [036] The adaptive broadcasting protocol, a cornerstone of this invention, is not merely about adjusting to network conditions. It's also about predicting them. By utilizing advanced algorithms, possibly incorporating machine learning or artificial intelligence, the invention can anticipate potential disruptions or congestions, adjusting its parameters proactively rather than merely reactively.

Such foresight ensures that the system remains one step ahead, providing optimal transmission conditions even before issues manifest.

[037] The error correction mechanism, apart from correcting corrupted data, offers another layer of resilience. It is designed to work in tandem with the adaptive broadcasting protocol. For instance, if the error correction system consistently detects and corrects errors from a particular channel, it might signal the adaptive protocol to reconsider its channel selection, ensuring that the system is always working at peak efficiency.

[038] The smart channel selection isn't just a static algorithm, either. It's continuously learning. By gathering data over time, it maps out patterns of congestion and interference, becoming more adept at selecting the right channel for any given moment. It might even pre-emptively switch channels ahead of anticipated disruptions, guaranteeing uninterrupted data flow.

Priority-based message handling, while ensuring timely transmission of crucial data, also aids in network resource management. By efficiently categorizing and queuing messages based on priority, the system can better allocate bandwidth, minimizing wastage and ensuring that critical messages don't get stuck behind less important data.

[039] The feedback mechanism, finally, closes the loop. It's not just about acknowledgment; it's about continuous refinement. Every piece of feedback, be it positive or negative, serves as a data point that the system can use to enhance its performance. Over time, with enough feedback, the system can adapt, evolve, and offer even better reliability and efficiency.

We Claim:

1. A method for wireless data broadcasting, wherein the broadcasting parameters are dynamically adjusted based on real-time network conditions using an adaptive broadcasting protocol.
- 5 2. The method of claim 1, further comprising an error correction mechanism capable of detecting and rectifying corrupted data packets during transmission without the necessity for complete retransmission.
- 10 3. The method of claim 1, wherein channel selection is determined by a smart algorithm that continuously evaluates the status and efficiency of available channels, selecting the most optimal channel for data transmission.
4. The method of claim 1, further comprising a priority-based message handling system, wherein data packets are assigned priority levels, ensuring timely and reliable transmission of high-priority messages irrespective of network conditions.
- 15 5. The method of claim 1, further including a feedback mechanism wherein recipient devices send acknowledgment signals or error reports back to the transmitting device, facilitating dynamic adjustments in broadcasting strategies.
6. A system for wireless data broadcasting, equipped with sensors to monitor real-time network conditions and to adjust broadcasting parameters dynamically through an adaptive broadcasting protocol.
- 20 7. The system of claim 6, where said system utilizes an advanced error correction mechanism that employs both cyclic redundancy checks and automatic repeat requests to ensure the reliable delivery of data packets.

8. The system of claim 6, wherein the incorporated channel selection algorithm has a learning mechanism, enabling it to anticipate potential disruptions or congestions based on historical data and patterns.
9. The system of claim 6, designed to categorize, queue, and broadcast messages based on their assigned priority levels, ensuring efficient bandwidth utilization and timely delivery.
10. The system of claim 6, which, through its feedback mechanism, captures and processes feedback from recipient devices to refine and enhance subsequent broadcasting strategies, ensuring continuous improvement in data transmission efficiency and reliability.

Dated this 24th day of August 2023

Applicant

Andhra University

ABSTRACT

HANDLING DATA MESSAGES IN A COMMUNICATION SYSTEM AND APPLICATION FOR RELIABLE WIRELESS BROADCAST

[040] A system and method for reliable wireless data broadcasting that dynamically

5 adapts to changing network conditions. The invention integrates an adaptive broadcasting protocol, error correction mechanisms, smart channel selection, priority-based message handling, and a feedback system. These components work cohesively to optimize the transmission of data over wireless channels, ensuring efficient, timely, and dependable delivery while minimizing resource wastage.

10 Accompanied Drawing **[FIGS. 1-2]**

Dated this 24th day of August 2023

Applicant

Andhra University

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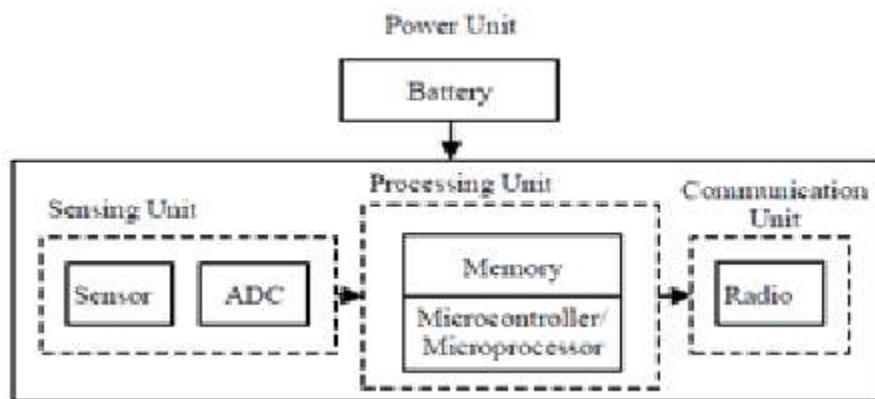


Figure 1

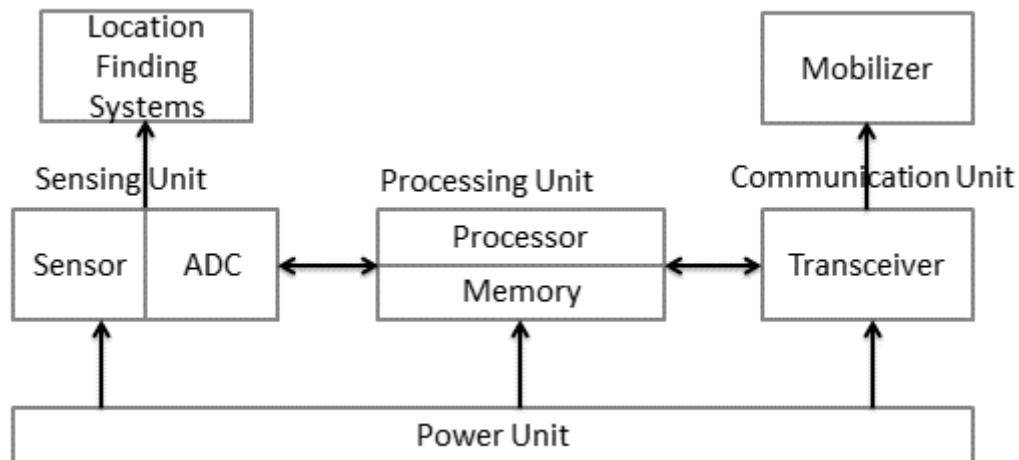


Figure 2

Dated this 24th day of August 2023