(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/09/2023

(21) Application No.202311065375 A

(43) Publication Date : 20/10/2023

(54) Title of the invention : SYSTEM AND METHOD FOR OPTIMIZING RANGE OF AN ELECTRONIC ARTICLE SURVEILLANCE SYSTEM

| | |
|---|---|
| (51) International classification | :G08B0013240000, H04N0007180000, G08B0013196000, G08B0025080000, H04W0004029000 |
| (86) International Application No<br>Filing Date | :NA<br>:NA |
| (87) International Publication No | : NA |
| (61) Patent of Addition to Application Number<br>Filing Date | :NA<br>:NA |
| (62) Divisional to Application Number<br>Filing Date | :NA<br>:NA |

(71)**Name of Applicant :**

**1)Tanisha Joshi**

Address of Applicant :Research Scholar, Department of Physics, School of Chemical Engineering & Physical Sciences, Lovely Professional University, Jalandhar - Delhi, Grand Trunk Rd, Phagwara, Punjab 144411, India. ---------- ----------

**2)Dr. Annie Sujith**

**3)M.Venkatesh**

**4)Talluri Venkata Lakshmi Bhavani Lalith**

**5)Akshay V**

**6)Gangisetti Sathwik**

**7)Boyapati Jnana Venkata Subhash**

**8)C Sai Vinay**

**9)Dr Rajesh M**

**10)Prof Sanjeev Kumar Trivedi**

**11)Dr. L.Karthick**

**12)Dr. Ujjal Aloke Sarkar**

**Name of Applicant : NA**

**Address of Applicant : NA**

(72)**Name of Inventor :**

**1)Tanisha Joshi**

Address of Applicant :Research Scholar, Department of Physics, School of Chemical Engineering & Physical Sciences, Lovely Professional University, Jalandhar - Delhi, Grand Trunk Rd, Phagwara, Punjab 144411, India. ---------- ----------

**2)Dr. Annie Sujith**

Address of Applicant :Assistant Professor, Department of ECE, Associate Professor, Department of Computer Science Engineering, Jyothy Institute of Technology, Pipeline Rd, near Ravi Shankar Guruji Ashram, Thathaguni, Bengaluru, Karnataka 560082, India. ---------- ----------

**3)M.Venkatesh**

Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, GMR Institute of Technology, Rajam, Vizianagaram Dist., Andhra Pradesh-532127, India. ---------- ----------

**4)Talluri Venkata Lakshmi Bhavani Lalith**

Address of Applicant :Department of Computer Science and Engineering, Vit-Ap University, G-30, Inavolu, Beside Ap Secretariat Amaravati, Andhra Pradesh 522237, India. ---------- ----------

**5)Akshay V**

Address of Applicant :Department of Computer Science and Engineering, VIT-AP University, G-30, Inavolu, Beside AP Secretariat Amaravati, Andhra Pradesh - 522237, India. ---------- ----------

**6)Gangisetti Sathwik**

Address of Applicant :Department of Computer Science and Engineering, VIT-AP University, G-30, Inavolu, Beside AP Secretariat Amaravati, Andhra Pradesh - 522237, India. ---------- ----------

**7)Boyapati Jnana Venkata Subhash**

Address of Applicant :Department of Computer Science and Engineering, VIT-AP University, G-30, Inavolu, Beside AP Secretariat Amaravati, Andhra Pradesh- 522237, India. ---------- ----------

**8)C Sai Vinay**

Address of Applicant :Department of Computer Science and Engineering, VIT-AP University, G-30, Inavolu, Beside AP Secretariat Amaravati, Andhra Pradesh - 522237, India. ---------- ----------

**9)Dr Rajesh M**

Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Hindustan Institute of Technology and Science, Padur, Chennai 603103, Tamilnadu, India. ---------- ----------

**10)Prof Sanjeev Kumar Trivedi**

Address of Applicant :Department of Electronics, Faculty of Engineering and Technology, Khwaja Moinuddin Chishti Language University, Lucknow 226013, Uttar Pradesh, India. ---------- ----------

**11)Dr. L.Karthick**

Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway. Coimbatore - 641 032, Tamil Nadu, India. ---------- ----------

**12)Dr. Ujjal Aloke Sarkar**

Address of Applicant :Enterprise Architect, NTT DATA, Oxygen Business Park, Tower - F, Sector - 4, NOIDA-201307 Uttar Pradesh, India. ---------- ----------

(57) Abstract :

SYSTEM AND METHOD FOR OPTIMISING RANGE OF AN ELECTRONIC ARTICLE SURVEILLANCE SYSTEM A method for the development of a device for detaching an RFID and EAS combo tag from its object. When an EAS/RFID combo tag is inserted into a certain area of the detaching unit, the spring clamp mechanism of the tag is detached. The system consists of an RFID module that has an energy coupler to receive transmitted energy, which consists of a first signal at a first frequency and a second signal at a second frequency, as well as a mixing element to combine the first and second signals to produce a third signal at a third frequency. The energy coupler then transmits the third signal to an EAS detection system. The technique further entails determining the range information in accordance with at least two of the beacon signals, which are present in the system as a plurality of beacon signals. The devices have a dynamic configuration capability and support wireless networking with other network entities. In an interrogation zone, a security system tag that has been triggered is found. When the activated security system tag is identified, the system also determines whether an object is in a surveillance detection zone. Activities that could need attention are identified using an integrated surveillance system that combines video surveillance and data from various sensor-based security networks. FIG.1

No. of Pages : 14 No. of Claims : 1