

Boletín VT

REDES DE SENSORES INALÁMBRICAS

60

4.º trimestre 2024

Vigilancia Tecnológica



Desde su aparición, los campos de aplicación de las redes de sensores inalámbricos se han ido ampliando de forma constante. La posibilidad de crear extensas plataformas de gestión integrada para la monitorización, captura de datos, y control remoto y en tiempo real mediante estas redes sensoriales, ha proporcionado una poderosa herramienta para el desarrollo de aplicaciones y servicios en sectores económicos tan diversos como el agrícola, el industrial o el de la administración pública.

El presente boletín, elaborado por la Unidad de Información Tecnológica de la Oficina Española de Patentes y Marcas (OEPM), pretende revisar la evolución de la innovación, en el marco de las patentes de las tecnologías TIC en relación con algunas de las aplicaciones más relevantes abordadas por las redes de sensores inalámbricos, tales como: su uso en

entornos agrícolas (gestión de cultivos, plagas, invernaderos, regadíos), su uso en entornos urbanos o públicos (seguridad ciudadana, infraestructuras, gestión de información medioambiental, polución, residuos) o su uso para la detección y gestión de incendios.

De este modo, el boletín, de periodicidad trimestral, recogerá las publicaciones más recientes de solicitudes internacionales de patente (solicitudes PCT) publicadas en el trimestre inmediatamente anterior a su elaboración. Se ha restringido el ámbito de este boletín a solicitudes PCT por considerarse que al ser estas solicitudes con las que las empresas pretenden proteger sus invenciones en distintos países, se corresponden con invenciones de una cierta relevancia tecnológica.

CONTENIDO:

- Redes de sensores para entornos agrícolas
- Redes de sensores para entornos urbanos o públicos
- Redes de sensores para detectar incendios
- Otras referencias

NIPO: 220-24-020-1

Solicitudes de Patente Publicadas

Los datos que aparecen en la tabla corresponden a una selección de las solicitudes de patentes PCT publicadas durante el trimestre analizado. Se puede acceder al documento completo haciendo clic sobre el mismo.

REDES DE SENSORES PARA ENTORNOS AGRÍCOLAS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|--------------------------------|---|---|
| WO2024229531A1 | COMMW SCIENT IND RES ORG [AU] | Monitoring system and apparatus for detection of hydrogen |
| WO2024258952A1 | LINDSAY CORP [US] | System and method for automatically assigning an identification number to a plurality of node controllers in an irrigation system |
| WO2024261550A1 | AGCO INT GMBH [CH] | Agricultural harvesting machine monitoring |
| WO2024218229A2 | AGROANT APS [DK] | A food dispenser for insects |
| WO2024217836A1 | AMAZONEN WERKE H DREYER SE & CO KG [DE] | Soil cultivation device |
| WO2024201194A1 | THE HOUSE FARMER S R L [IT] | Modular system for cultivation |
| WO2024248758A1 | OSTIM TEKNIK UENIVERSITESI [TR] | Smart autonomous agricultural spraying and load carrier vehicle |
| WO2024213982A1 | HALTER USA INC [US] | Reduced radio transmitter power use and method therefor |
| WO2024211742A2 | SENSEI AG HOLDINGS INC [US] | Robotically manipulated sensors for agricultural habitats |
| WO2024237864A1 | UNIV NANYANG TECH [SG]; PANASONIC FACTORY SOLUTIONS ASIA PACIFIC PTE LTD [SG] | A method and apparatus for crop health monitoring and nutrient supply analysis for crop cultivation |
| WO2024201162A1 | AGCO INT GMBH [CH] | Residue spread monitoring |
| WO2024241115A1 | AGCO INT GMBH [CH] | Agricultural system for monitoring and controlling an implement |
| WO2024261549A1 | AGCO INT GMBH [CH] | Agricultural harvesting machine monitoring |
| WO2024201164A1 | AGCO INT GMBH [CH] | Implement monitoring |
| WO2024201161A1 | AGCO INT GMBH [CH] | Material flow monitoring |
| WO2024205443A1 | AA PLUS TECH LLC [RU] | Method for controlling microalgae cultivation |
| WO2024231713A1 | SPIDERWEB LABS PTY LTD [ZA] | Distributed acoustic sensor arrangement and distributed acoustic sensor system, intrusion |
| WO2024252194A1 | GSI ELECTRONIQUE INC [CA]; UNIV MANITOBA [CA] | Access monitoring system and related methods and systems |
| WO2024236060A1 | ALIAxis RESEARCH & TECH [FR] | Water supply network and method of operating a water supply network |

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|--------------------------------|--|---|
| WO2024215279A1 | NAMIK KEMAL UENIVERSITESI REKTOERLUEGUE OEZEL KALEM [TR] | Laboratory type, fully automated micro green growth cabinet |
| WO2024251717A1 | BOSCH GMBH ROBERT [DE] | Method and device for detecting a critical moisture level within a housing of an active module |
| WO2024233820A1 | BEST PLANET SCIENCE LLC [US] | System and method for the transformation of irrigation water into fertilized, structured and hydrogenated water |
| WO2024259857A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus, and system for semantic communications |
| WO2024206773A1 | X DEV LLC [US] | Geochemical analysis of drainage basins |
| WO2024259856A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus, and system for semantic communications |
| WO2024259860A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus, and system for semantic communications |
| WO2024200098A1 | SIGNIFY HOLDING BV [NL] | A sensing system for determining a parameter of a set of animals |
| WO2024225077A1 | OMRON TATEISI ELECTRONICS CO [JP] | Information processing device, information processing method, and program |
| WO2024229224A2 | TUFTS COLLEGE [US] | Artificial roots for soil nutrient uptake monitoring |
| WO2024223891A1 | BELIMO HOLDING AG [CH] | Pollution protected sensor units |
| WO2024231763A1 | INTELLIGENT AGRICULTURAL SOLUTIONS LLC [US] | Rotary optical encoder devices for optical flow sensing, and related sensors and methods |
| WO2024259855A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus, and system for semantic communications |
| WO2024211867A1 | POTENTO LLC [US] | A portable deployable modular indoor vertical agricultural growing machine |
| WO2024241708A1 | HITACHI LTD [JP] | Oil diagnostic method and oil diagnostic system |
| WO2024227663A1 | AMS SENSORS GERMANY GMBH [DE] | Optical detection method and light detection structure |
| WO2024208911A1 | INFICON GMBH [DE] | Test gas sensor device and method for searching for a test gas leak |
| WO2024214032A1 | KVERNELAND GROUP RAVENNA SRL [IT] | Rotobaler with a density sensor |
| WO2024259858A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus and system for semantic communications |
| WO2024249911A1 | BATTELLE MEMORIAL INSTITUTE [US] | Electrochemical leaching for nutrient delivery in water |
| WO2024256947A1 | TECNIPLAST SPA [IT] | Method and system for controlling a watering plant for laboratory animals |
| WO2024238065A1 | CATERPILLAR INC [US] | Galling prediction and notification system for a machine |
| WO2024218773A1 | PHYTECH LTD [IL] | Method and system for estimating carbon fixation |
| WO2024245796A1 | SIGNIFY HOLDING BV [NL] | A system arranged for controlling birds laying eggs in a laying nest |
| WO2024263084A1 | DELAVAL HOLDING AB [SE] | A system for cooling dairy animals |
| WO2024242062A1 | SIGNPOST CORP [JP]; 8THCAL INC [JP] | Instrument and signal processing system |

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REDES DE SENSORES PARA ENTORNOS URBANOS O PÚBLICOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|--------------------------------|---|---|
| WO2024250457A1 | HUAWEI TECH CO LTD [CN] | Communication method and communication apparatus |
| WO2024250444A1 | HUAWEI TECH CO LTD [CN] | Operations related to ai/ml model |
| WO2024221477A1 | ZTE CORP [CN] | Method, device and computer program product for wireless communication |
| WO2024221474A1 | ZTE CORP [CN] | Method, device and computer program product for wireless communication |
| WO2024197516A1 | QUALCOMM INC [US]; YANG LUANXIA [CN]; WANG XIAOJIE [US]; ZHANG XIAOXIA [US]; LI JUNYI [US] | Transmitter capability reporting for ambient internet of things (iot) devices |
| WO2024221475A1 | ZTE CORP [CN] | Method, device and computer program product for wireless communication |
| WO2024261966A1 | NIPPON TELEGRAPH & TELEPHONE [JP] | Control device, control method, and program |
| WO2024253815A2 | HAYDEN AI TECH INC [US] | System and methods for automatically detecting double parking violations |
| WO2024216523A1 | UNIV SHENZHEN TECHNOLOGY [CN] | Method and system for sensing foreign matter within urban rail train travelling clearance, and apparatus and medium |
| WO2024198996A1 | HUAWEI TECH CO LTD [CN] | Communication method and apparatus |
| WO2024254887A1 | NOKIA SHANGHAI BELL CO LTD [CN]; NOKIA SOLUTIONS & NETWORKS OY [FI]; NOKIA TECHNOLOGIES OY [FI] | Sensing mode switching |
| WO2024199072A1 | HUAWEI TECH CO LTD [CN] | Communication method and communication apparatus |
| WO2024221301A1 | BEIJING XIAOMI MOBILE SOFTWARE CO LTD [CN] | Data processing method and apparatus, core network device and computer readable storage medium |
| WO2024224320A1 | 2F WATER VENTURE S R L SOC BENEFIT [IT] | Method for locating water leaks in a water supply network and computer program based on said method |
| WO2024226848A2 | STRONG FORCE EE PORTFOLIO 2022 LLC [US] | Ai-based energy edge platform, systems, and methods |
| WO2024233973A2 | FOURSQUARE LABS INC [US] | Hierarchical grid based geospatial knowledge graph and associated operations |
| WO2024259857A1 | HUAWEI TECH CO LTD [CN] | Method, apparatus, and system for semantic communications |
| WO2024230161A1 | ZTE CORP [CN] | Method, device and computer program product for wireless communication |
| WO2024218370A1 | IGNION S L [ES] | SELF-TUNABLE IOT DEVICE AND RADIATING SYSTEM BASED ON NON-RESONANT RADIATION ELEMENTS WITH ENHANCED MATCHING TOPOLOGIES |
| WO2024218684A1 | NAT RES COUNCIL CANADA [CA]; HIS MAJESTY THE KING IN RIGHT OF CANADA AS REPRESENTED BY THE MINISTER | Optical dispersive element for use with neuromorphic camera in a laser warning systems (lws) |

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|--------------------------------|--|---|
| | OF NAT DEFENCE [CA] | |
| WO2024214860A1 | NEUBILITY INC [KR] | Method and apparatus for planning reference local path on local semantic navigation map for autonomous traveling based on low-cost sensor |
| WO2024234986A1 | SONY SEMICONDUCTOR SOLUTIONS CORP [JP]; YAN DONGSHENG [CN] | Method for customizing sensor function and smart device comprising sensor |
| WO2024231682A1 | EWATERSERVICE S LTD [GB] | Methods and systems to generate and transact environmental attributes generated by distributed water tap systems |

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REDES DE SENSORES PARA DETECTAR INCENDIOS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|--------------------------------|---|--|
| WO2024210806A1 | BEAMONICS AB [SE] | Gas sensing surveillance system |
| WO2024238006A1 | TYCO FIRE & SECURITY GMBH [CH]; SIEGEL ADAM ELIJAH [US] | Fire panel end of line supervision monitoring |
| WO2024246391A1 | FERNANDEZ MONTES MARTIN EUSEBIO [ES] | Communication device for evacuation |
| WO2024232727A1 | DAEYOUNG IOT INC [KR] | Parking lot electric vehicle fire control system using artificial intelligence and thermal imaging sensor |
| WO2024218402A1 | SPICECART GBR [DE] | A sensor and a sensor tape |
| WO2024223891A1 | BELIMO HOLDING AG [CH] | Pollution protected sensor units |
| WO2024258485A1 | SIEMENS INDUSTRY INC [US] | System and method for fire detection |
| WO2024246751A1 | TYCO FIRE PRODUCTS LP [US] | Fire suppression system |
| WO2024261578A1 | RESCUE AIR SYSTEMS INC [US] | Method and system of actuator based valve control to isolate breathable air supplied to one or more levels and/or one or more regions of a structure having a firefighter air replenishment system implemented therein |
| WO2024232828A1 | NAT UNIV SINGAPORE [SG] | Tool for use in virtual environment |

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OTRAS REFERENCIAS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|--------------------------------|---|--|
| WO2024206800A1 | SMART TRACKING TECH LLC [US] | Animal collar system with activity classification and related methods |
| WO2024259495A1 | FLEET SPACE TECH PTY LTD [AU] | "Seismic sensor node for rapid deployment" |
| WO2024243615A1 | DURKIN GILES HOLDINGS PTY LTD [AU] | Gnss-unavailable dead reckoning system and method |
| WO2024228885A1 | TIDALX AI INC [US] | Oceanic environmental monitoring |
| WO2024246575A1 | KAYRROS [FR] | Method and system for digital surface modeling based on training a neural radiance field model |
| WO2024238676A1 | QUALCOMM INC [US] | Enhanced vehicle to everything (v2x) cybersecurity capabilities |
| WO2024229531A1 | COMMW SCIENT IND RES ORG [AU] | Monitoring system and apparatus for detection of hydrogen |
| WO2024234233A1 | ABB SCHWEIZ AG [CH]; ZHANG JIAFAN [CN] | Method for safety monitoring, robot, and robot system |
| WO2024246289A1 | PECKIILESS AB [SE] | Gas sensor and method of manufacturing the gas sensor |
| WO2024252194A1 | GSI ELECTRONIQUE INC [CA]; UNIV MANITOBA [CA] | Access monitoring system and related methods and systems |
| WO2024220060A1 | SADAKAT YAPI MIMARLIK INSAAT MUTEAHHITLIK VE TICARET LTD SIRKETI [TR] | A system and method for rapid damage assessment and dispatching assistance post-earthquakes |
| WO2024202043A1 | NIPPON TELEGRAPH & TELEPHONE [JP] | Evaluation device, evaluation method, and program |
| WO2024264048A1 | CALIFORNIA INST OF TECHN [US] | Fiber-seismic tomography |
| WO2024240379A1 | MERCEDES BENZ GROUP AG [DE] | Workload execution in deterministic pipelines |

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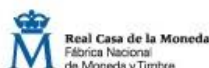
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Los ITPs** de la OEPM detectaron solicitudes de patente relevantes cuando estábamos a mitad del proyecto y gracias a ello pudimos reconducir nuestra investigación.



Gracias a los ITPs** de la OEPM hemos podido decidir la mejor forma de protección de nuestros resultados de I+D y redactar adecuadamente nuestras solicitudes de patente.



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