

Boletín VT

REDES DE SENSORES INALÁMBRICAS

57

1.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
WO 2024004486 A1	KUBOTA KK	Work vehicle, control method, and control system
WO 2024004633 A1	KUBOTA KK	Work device diagnosis system, agricultural machine, agricultural work assistance system
WO 2024004575 A1	KUBOTA KK	Work vehicle and method for controlling work vehicle
WO 2024050071 A1	HEARTLAND AG TECH INC	An irrigation maintenance system for determining irrigation valve and booster pump health
WO 2024005284 A1	JEONG HYUK	Automatic honeycomb extracting device
WO 2024007088 A1	CHEMSPEED RES AG	System for controlling pests on plants
WO 2024003651 A1	PREC PLANTING LLC	Method and sprayer system for calibrating dosing valves for fluid injection
WO 2024015556 A1	CNH IND AMERICA LLC	Systems and methods for header height control
WO 2024010656 A1	MINERAL EARTH SCIENCES LLC	Dynamic lighting for plant imaging
WO 2024006259 A1	CAKEBOXX TECH LLC	Aquaculture platform
WO 2024004662 A1	KUBOTA KK	Assistance system for agricultural machine
WO 2024013584 A1	AGCO INT GMBH	Grain cleaning apparatus for a combine harvester
WO 2024004463 A1	KUBOTA KK	Travel control system, travel control method, and computer program
WO 2024033361 A1	CEALVET S L U	Method and system for assessing livestock welfare based on the analysis of animals vocalization audio signals
WO 2024008825 A1	PLICORE GMBH	Optical measuring device for the spectral analysis of a sample
WO 2024028522 A1	ALTAVITIS TECH S L	On-the-go precision dosage system for phytosanitary products and liquid fertilisers for the foliar spraying or misting of vineyards
WO 2024055084 A1	ZASSO GROUP AG	User operated electric weeding system and method for activating a user operated electric weeding system
WO 2024047092 A1	BASF AGRO TRADEMARKS GMBH	Method for providing herbicide application data in order to control a herbicide product application device
WO 2024025585 A1	PALO ALTO RES CT INC	Controlling cell functioning and motility with the aid of a digital computer
WO 2024031066 A1	LEAFICIENT INC	Plant growth system and methods
WO 2024020542 A1	UNIV ILLINOIS	Methods to estimate field-level carbon, water and nutrient implications for agriculture
WO 2024014336 A1	DENSO CORP	Freshness maintaining system
WO 2024017729 A1	GEA FARM TECHNOLOGIES GMBH	Apparatus and method for monitoring a milking process
WO 2024023728 A1	PREC PLANTING LLC	Agricultural sample packaging system
WO 2024025527 A1	NEATLEAF INC	Aerial sensor and manipulation platform for farming and method of using same
WO 2024006488 A1	SOIL IN FORMATION PBC	Total soil carbon sensing system
WO 2024026060 A1	CNH IND AMERICA LLC	Agricultural system and method for determining header throughput of a harvester
WO 2024043363 A1	KOREA ELECTRONICS TECHNOLOGY	Method and device for providing reference color information of crop by using image segmentation technique
WO 2024023053 A1	SIGNIFY HOLDING BV	Method and system for illuminating plants with artificial light

WO 2024035913 A1	CNH IND AMERICA LLC	Active deck plate opening
WO 2024005843 A1	IRRIGREEN INC	Pressure sensing in a rotary sprinkler
WO 2024033919 A1	XTRION AGRICULTURE INNOVATION LTD	Plant growing system for providing electrical power to enhance growth
WO 2024019632 A1	PUBLICHNOE AKTSIONERNOE OBSHCHESTVO SBERBANK RUSSIA	Device and method for determining crop productivity
WO 2024008374 A1	AMAZONEN WERKE H DREYER SE & CO KG	Method for controlling the smooth running of a share unit
WO 2024054182 A1	BOZKURT SABRI	Agro artificial intelligence fertilization and irrigation automation system
WO 2024009326 A1	AREETE BUSINESS SOLUTIONS PVT LTD	lot-based cattle health and heat monitoring system
WO 2024031164 A1	GTS DO BRASIL LTDA	Electrically driven agricultural platform
WO 2024054663 A1	REALMFIVE INC	Liquid monitoring system and method
WO 2024039292 A1	SCR ENG LTD	Monitoring device for an agricultural farm
WO 2024009244 A1	LOAM BIO PTY LTD	Systems and methods for agricultural additive delivery
WO 2024033673 A1	KAVAKPOUR ALI	Intelligent subsurface injection irrigation system
WO 2024035407 A1	DEERE & CO	Systems and methods for predictive harvesting logistics
WO 2024023597 A1	NEWDELMAN MITCHELL J	Hollow shaft injection drilling array
WO 2024007141 A1	INST OF FARMLAND IRRIGATION OF CAAS	Regional deep soil moisture estimation model establishing method, and system
WO 2024054237 A1	MICROSHARE INC	Smart pest trap in a policy fabric and sharing system
WO 2024044830 A1	CNH IND BRASIL LTDA	System and method for an agricultural harvester
WO 2024052757 A1	RPERCEPTION LTD	Robotic sprayer
WO 2024036397 A1	VADERSTAD IND INC	Look-ahead calibration and out-of-calibration detection or response for sectional control technology of an air seeding apparatus
WO 2024052804 A1	LINCOLN AGRITECH LTD	Systems and methods for measuring properties of water at site
WO 2024035934 A1	HEARD MARTIN PERRY	Ultrasound controlled spot sprayer and methods for crop protection
WO 2024013577 A1	MORADKHANI FARAS	An intelligent farm task management system
WO 2024028360 A1	SOURCE AG INT B V	Greenhouse environment optimisation
WO 2024016064 A1	HARTWIG LEONIDIA LEITZKE	Robotised equipment for weighing poultry
WO 2024019231 A1	SEOUL NAT UNIV R&DB FOUNDATION	Air recirculation and ventilation system for pig house
WO 2024020829 A1	SHENZHEN XPECTVISION TECH CO LTD	Imaging system and method for sorting animals by anatomy
WO 2024020629 A1	SENSORC PTY LTD	Soil carbon sensor and sensing arrangement
WO 2024020418 A1	CARBON METRICS GLOBAL	Carbon offset platform
WO 2024023593 A1	NEWDELMAN MITCHELL J	Sub-surface injection system for subsurface blending and horizon creation
WO 2024020599 A2	DONALD DANFORTH PLANT SCIENCE CENTER	Plants with reduced plasticity
WO 2024038469 A1	URBANKISAAN FARMS PVT LTD	System and method for automated dosing of stock solution

[WO 2024026118 A2](#)

RAIN BIRD CORP

Irrigation systems and methods with satellite communications

[...ver más](#)

REDES DE SENSORES PARA ENTORNOS URBANOS O PÚBLICOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

WO 2024015708 A1	AISLEWORX TECH LLC	Mobile apparatus with display and lens technology
WO 2024026810 A1	SIN CHANG HUN IND CO LTD	Electronic device cloud management system
WO 2024016157 A1	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD	Sensing and communication method and apparatus, and communication device
WO 2024048901 A1	INBIC INC	System and method for object detection and tracking by using edge cctv
WO 2024025421 A1	KONGSBERG MARITIME AS	Multi-sensor and related aspects
WO 2024054633 A1	EVOQUA WATER TECH LLC	ENABLING INTERNET OF THINGS (iot) CAPABILITIES IN LEGACY WATER TREATMENT SYSTEMS
WO 2024025322 A1	BIONANO HEALTH GUARD RES CENTER	Autonomous mobile system for detecting hazardous substances in air
WO 2024042510 A1	UNIV RAMOT	A system and method of controlling a swarm of agents
WO 2024023377 A1	UNIV ALICANTE	Low-noise system for synchronously and wirelessly acquiring ambient noise signals in seismic sensor networks
WO 2024020375 A2	DONG BING	Software platform to conduct building onsite weather forecasting with crowdsourcing data

[...ver más](#)

REDES DE SENSORES PARA DETECTAR INCENDIOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

WO 2024046780 A1	WAGO VERWALTUNGS GMBH	Control of building services systems
WO 2024006172 A1	RESCUE AIR SYSTEMS INC	Method and system of air/environmental parameter based automatic closing of one or more valves to isolate breathable air supplied to one or more levels of a structure having a firefighter air replenishment system implemented therein
WO 2024005890 A1	RESCUE AIR SYSTEMS INC	Method and system of air parameter based automatic bypassing of a source of breathable air in a firefighter air replenishment system implemented within a structure
WO 2024013310 A1	TRINAMIX GMBH	Temperature drift compensation of photoresistors
WO 2024012684 A1	BOSCH GMBH ROBERT	Method and system for fire detection
WO 2024003748 A1	AIR IP HOLDINGS LTD	Capsule
WO 2024005701 A1	TERMISK SYSTEMTEKNIK I SVERIGE AB	A system and method for fire detection
WO 2024013528 A1	WATERSCOPE ZRT	Fire hydrant with improved sensing and operating properties and method for reporting the operational status of the fire hydrant
WO 2024050046 A1	UBICQUIA INC	Apparatus, system, and method for detecting optical events associated with distribution transformers
WO 2024047434 A1	FASR FULL AUTMATIC SPRINKLER ROBOT ZANON	Automatic fire extinguishing system for parking spaces for electric vehicles
WO 2024043601 A1	SAMSUNG ELECTRONICS CO LTD	Cooking apparatus for detecting fire risk and control method therefor
WO 2024044742 A1	HALE PRODUCTS INC	Fire-fighting device including a distributed control system
WO 2024036127 A2	HAS LLC	Networks, systems and methods for wildfire mitigation
WO 2024006039 A1	RESCUE AIR SYSTEMS INC	Methods and system of incident based camera device activation in a firefighter air replenishment system having breathable air supplied therein
WO 2024043548 A1	LG ENERGY SOLUTION LTD	Battery pack with enhanced fire safety

[..ver más](#)

OTRAS REFERENCIAS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO 2024030452 A1	EBB CARBON INC	Measurement, reporting, and verification (mrv) for ocean carbon dioxide removal systems
WO 2024030397 A1	THE AES CORP	Method and system for operating a wind farm by reconciling performance and operational constraints
WO 2024011079 A1	JOHNSON CONTROLS TYCO IP HOLDINGS LLP	Method and system to provide alarm risk score analysis and intelligence
WO 2024047385 A1	ERICSSON TELEFON AB L M	Dynamic application vulnerable use cases identification in a cloud native environment
WO 2024033442 A1	ASSA ABLOY AB	System and method for transporting csi frames
WO 2024050365 A1	HEIRLOOM CARBON TECH INC	Controls architecture for predicting and maintaining co2 uptake rates in direct air capture contactors, and methods of operating the same
WO 2024058709 A1	HITACHI LTD	Method and system for facility management for identifying actionable event in relation to a building
WO 2024050415 A1	DRESSER LLC	Powering sensors with an existing process control loop
WO 2024003217 A1	CLEAR SEA GMBH	Method and apparatus for categorising foodstuffs
WO 2024006070 A1	JOHNSON CONTROLS TYCO IP HOLDINGS LLP	An aircraft surveillance system
WO 2024013486 A1	D BUG LTD	Rearing system for insect larvae, method of rearing insect larvae, method of producing a food product or a feed product from insect larvae
WO 2024041904 A1	SIEMENS AG	Predicting a batch quality value by a machine learning model for a dedicated batch of material in a production line
WO 2024044018 A1	INVENSENSE INC	Event activity detection signaling
WO 2024015130 A1	RAYTHEON CO	Triplet acoustic ring assembly and nested array
WO 2024004770 A1	NATIONAL UNIV CORPORATION TOKYO UNIV OF AGRICULTURE AND TECHNOLOGY	Sensing system and sensing method
WO 2024002725 A1	SIEMENS AG	Device for monitoring the condition of a machine
WO 2024033088 A1	STEINEL GMBH	Building services element, building control system comprising same, and method for controlling a device
WO 2024046783 A1	SIGNIFY HOLDING BV	Operating with compromised master controllers for electrical systems
WO 2024010821 A1	GEN ELECTRIC	System and method for multi-gas sensing at several operating temperatures
WO 2024006321 A1	SCHLUMBERGER TECHNOLOGY CORP	Continuous monitoring system for detecting, locating, and quantifying fugitive emissions
WO 2024010771 A1	UNIVERSAL CITY STUDIOS LLC	Amusement park interactive guidance system
WO 2024033037 A1	ZAHNRADFABRIK FRIEDRICHSHAFEN	Connecting a strain gauge to a measurement object
WO 2024056563 A1	KONINKLIJKE PHILIPS NV	An apparatus for increasing an integrity of signals in a signaling network
WO 2024008301 A1	DOMETIC SWEDEN AB	Minibar communication
WO 2024030510 A1	SAUDI ARABIAN OIL CO	Wireless hydrogen subsurface sensing framework for reservoir optimization
WO 2024049534 A1	QUALCOMM INC	Method for distributed compute operation across connected devices
WO 2024015661 A1	MAXAR INTELLIGENCE INC	Onboard geolocation for images
WO 2024002453 A1	EATON INTELLIGENT POWER LTD	Determining degradation of an electrical device
WO 2024006642 A1	ALARM COM INC	Automated property humidity control

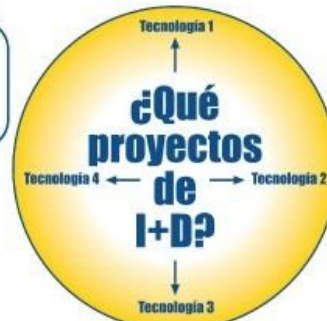
WO 2024012293 A1	XPT EDS HEFEI CO LTD	Method for diagnosing failure of electric driving component of vehicle, and control apparatus and vehicle
WO 2024028114 A1	ERICSSON TELEFON AB L M	Determining anomalous state of wireless communication devices
WO 2024053765 A1	LG ELECTRONICS INC	Guide robot and guide robot operation method
WO 2024029236 A1	EBARA CORP	Information processing device, inference device, machine learning device, information processing method, inference method, and machine learning method
WO 2024031951 A1	UNIV DONGHUA	Device for using airflow under clothes to evaluate thermal protection performance
WO 2024010764 A1	MORGEN TECH INC	Tunneling of short-range sensor data through long-range wireless technology
WO 2024049177 A1	LG ENERGY SOLUTION LTD	Battery diagnosis device, battery pack, electric vehicle, and battery diagnosis method
WO 2024010819 A1	GEN ELECTRIC	Systems and methods for gas sensing with electrochemical gas sensors
WO 2024017390 A1	POSITEC POWER TOOLS SUZHOU CO LTD	Autonomous working apparatus and system, and control method
WO 2024012204 A1	SHI ZHAOZHOU	Fishing reel electromagnetic braking device, fishing line and speed measurement mechanism
WO 2024032460 A1	VIVO MOBILE COMMUNICATION CO LTD	Data collection method and apparatus and communication device
WO 2024014575 A1	WIDICO INC	Speech recognition and facial recognition-type gas safety management system
WO 2024010458 A1	EQUINOR ENERGY AS	Sensing within a subsea electric architecture in a wind farm
WO 2024022735 A1	SONY GROUP CORP	Methods, communications devices, and infrastructure equipment
WO 2024025589 A1	PALO ALTO RES CT INC	Feedback-based device for nucleation control
WO 2024022851 A1	SIEMENS AG	Method of training a machine learning model for detecting one or more faults
WO 2024040359 A1	MADARIAGA ELGUETA GABRIEL ELICEO	System and method for measuring fluid flow in pressurised and/or atmospheric systems that uses at least one valve as a sensor element
WO 2024000010 A1	RHEEM AUSTRALIA PTY LTD	Sensor strip for water heater
WO 2024056293 A1	CONTINENTAL AUTOMOTIVE TECH GMBH	Method and system to authenticate camera device and camera data from common attacks
WO 2024010904 A1	OCEANEERING INT INC	Highly available multimedia ocean perception system
WO 2024044393 A1	CEATZ INC	Improving utilization of a physical dining environment using artificial intelligence
WO 2024013413 A1	GENOVES RAMIREZ PEDRO	Unmanned aerial system for autonomously delivering and collecting products
WO 2024025113 A1	SAMSUNG ELECTRONICS CO LTD	Vacuum cleaner and control method for same
WO 2024010736 A1	APPLIED MATERIALS INC	Sustainability monitoring platform with sensor support
WO 2024039428 A1	ITRON INC	Efficient compression of sensor data
WO 2024040308 A1	COMMW SCIENT IND RES ORG	Sensor apparatus for use in liquids, suspensions and slurries
WO 2024015985 A1	BLACK & VEATCH HOLDING CO	Method and computing device for detecting anomalous sensor data
WO 2024014275 A1	CYNAPS INC	Ventilation control system
WO 2024011321 A1	9374 0587 QUEBEC INC	Acoustic tracking system
WO 2024025270 A1	LG ELECTRONICS INC	Method and device for displaying likelihood of occupying road space
WO 2024043801 A1	SAUDI ARABIAN OIL CO	Method and apparatus for autonomous gravity and/or magnetic field measurement
WO 2024026370 A1	PENTAIR INC	Aquatic equipment monitoring system and method
WO 2024044154 A1	NEC LAB AMERICA INC	Scalable biometric sensing using distributed mimo radars
WO 2024015891 A1	UNIV CALIFORNIA	Image and depth sensor fusion methods and systems

WO 2024018227 A1	TOTAL VEHICLE SOLUTIONS GROUP LTD	Intelligent drum cycles for concrete mixers
WO 2024030555 A1	BALTIMORE AIRCOIL CO INC	Drift detection apparatus, system, and method
WO 2024040307 A1	COMMW SCIENT IND RES ORG	Sensor apparatus for partially saturated porous media applications
WO 2024040367 A1	TANGENE INCORPORATED	Method and apparatus for monitoring organisms by means of artificial intelligence-based automatic system
WO 2024024431 A1	mitsubishi heavy ind thermal systems ltd	Monitoring system, monitoring method, and program
WO 2024035731 A1	ZODIAC POOL SYSTEMS LLC	Water quality control systems and methods for swimming pools and spas
WO 2024020617 A1	PROA ANALYTICS PTY LTD	Wildlife detection, deterrent, and self-cleaning system and method for environmental instrumentation
WO 2024043767 A1	LG ENERGY SOLUTION LTD	Cylindrical battery comprising pressure sensor, apparatus for monitoring swelling pressure and battery management system comprising same
WO 2024053342 A1	PANASONIC IP MAN CO LTD	Relay device, information collection system, and relay method
WO 2024022156 A1	HUAWEI TECH CO LTD	Method for establishing sensing network, and related apparatus
WO 2024014089 A1	SIDEPEAK CO LTD	Information processing device, information processing program, and information processing system
WO 2024024799 A1	UNIV KAGOSHIMA	Sailor protection device, sailor protection system, sailor protection program, watercraft activity inference device, report writing assistance system, and watercraft activity inference program
WO 2024011286 A1	UNIV ADELAIDE	Structural health monitoring sensor and system
WO 2024005929 A1	WESTERN DIGITAL TECH INC	Audio sensors for controlling surveillance video data capture
WO 2024025008 A1	PLUTO	Method for providing pet-related social network platform
WO 2024006219 A1	FREEPOR MINERALS CORP	System and method for determining estimated remaining mineral in a stockpile
WO 2024019724 A1	FISHER ROSEMOUNT SYSTEMS INC	Systems, apparatus, articles of manufacture, and methods for sequence of event generation for a process control system
WO 2024035961 A2	HARTDESIGN! LTD	Pet chase toy

¡¡Por sólo 500€ añade 150 especialistas* a su Equipo de I+D!!



Los ITPs** de la OEPM nos proporcionan información imprescindible para decidir la priorización óptima de proyectos de I+D en los que invertir.



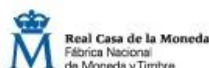
Los ITPs** de la OEPM nos han ahorrado horas de revisión bibliográfica para definir el punto de partida de nuestros proyectos de I+D.



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.



* La OEPM cuenta con más de 150 examinadores de patentes especializados en los diversos sectores tecnológicos y en la búsqueda de información científico-técnica.

** Los Informes Tecnológicos de Patentes o ITPs son estudios a la medida que incluyen una búsqueda de patentes y de literatura científica con un análisis en profundidad de los documentos más relevantes. Su coste es de 440 euros más IVA.