

Boletín VT

REDES DE SENSORES INALÁMBRICAS

61

1.º trimestre 2025

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
WO2025038022A1	ERICSSON TELEFON AB L M [SE]	Full power mode 1 non-coherent codebook for 8 tx ue
WO2025034410A2	BUTLR TECH INC [US]	Energy efficient wireless network of sensors
WO2025034156A1	ERICSSON TELEFON AB L M [SE]	Methods for distributing reference measurements for carrier phase based positioning
WO2025045598A1	JET ENG SYSTEM SOLUTIONS LTD [GB]; THOMAS JAMES [GB]; PATEL ROWENA [GB]	Method and apparatus for communications in a floating environment
WO2025038704A1	CORNELL PUMP COMPANY LLC [US]	Remote equipment monitoring and management system
WO2025050039A1	RIES JAMES [US]; HOEKSTRA DANIEL [US]	Wireless communications module and system for controlling wireless automated gated pipe irrigation valves
WO2025049637A1	ERICSSON TELEFON AB L M [SE]; VANUKURU RISHI RAMA RAO [US]; PHILLIPS GREGOIRE	System and method for multi-modal adaptive spatial remote communication
WO2025048395A1	HUBMEME CORP [KR]	Method for automatically controlling smart farm and system therefor
WO2025024886A1	SHEPHERD MONITORING SYSTEMS PTY LTD [AU]	Sensor system
WO2025015037A1	SYMPHONY DIAGNOSTICS INC [US]	Systems and methods for animal health assessment, surveillance, and enhancement
WO2025024900A1	CERTANE CT PTY LTD [AU]	Systems and methods for crop monitoring
WO2025015035A1	UNIV CALIFORNIA [US]	Placement and drone flight path mapping of agricultural soil sensors using machine learning
WO2025032381A1	PREC PLANTING LLC [US]	Below ground sensing system for sensing different soil parameters
WO2025016727A1	SONY SEMICONDUCTO R SOLUTIONS CORP [JP]; SONY EUROPE BV [GB]	Image sensor assembly with high-sensitive pixel element and low-sensitive pixel element
WO2025008766A1	SMARTECH THE IND PIVOT LTD [IL]	Using data from wood industry production processes to monitor environmental quality parameters of trees and tree growing regions
WO2025004034A1	NESS FERTIGATION LTD [IL]	A fertigation system and a method of determining an amount of fertilizer to mix with water in a fertigation system

WO2025037153A1	NARANG GURAV [IN]	System and method for operation of a retractable green house roof
WO2025003936A1	UNIV DO PORTO [PT]; CIMAR CENTRO INTERDISCIPLINAR DE INVESTIGACAO MARINHA E AMBIENTAL [PT]; SOGRAPE VINHOS S A [PT]	Biosensor device and method for assessing responses to pesticide applications in soils
WO2025052210A1	NOKIA TECHNOLOGIES OY [FI]	Measurement configuration
WO2025004535A1	SONY GROUP CORP [JP]	Sensor, control device, measurement system, method for controlling sensor, and method for controlling control device
WO2025049479A1	WELCH ALLYN INC [US]	Modular monitoring systems and methods
WO2025042031A1	IM SUNG HYUK [KR]; MIMICHUNGARANG CO LTD AGRICULTURAL CORP [KR]; HERI FARMS INC [KR]	Smart farm system capable of controlling uniform growth of microorganisms
WO2025037046A1	TAMPEREEN YLIOPISTO [FI]	Biopolymeric optical fiber for humidity sensing
WO2025014633A2	WELLNUO LLC [US]	Multi sensor array smart plug for health and habit tracking
WO2025038584A2	CLEVERPET INC [US]	Automated communication training system, method and apparatus
WO2025032461A1	VOLTA ROBOTS SRL [IT]	Method for controlling an irrigation system of a ground and related control system
WO2025046577A1	ARIEL SCIENT INNOVATIONS LTD [IL]	Vertical farming systems
WO2025024992A1	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD [CN]	Wireless communication devices and wireless communication methods for determining data
WO2025054670A1	UNIV SYDNEY [AU]	Systems and methods for determining moisture content of soil
WO2025014174A1	LS MTRON LTD [KR]	Agricultural work vehicle and control method therefor
WO2025029199A1	AGENCY SCIENCE TECH & RES [SG]; LIGHTHAUS PHOTONICS PTE LTD [SG]	Hyperspectral imaging system
WO2025010433A2	TAVACI TECH LLC [US]; LEE ANDREW [US]	Systems and methods for distributing seed from drum seeder assemblies and transfer apparatuses
WO2025033169A1	TOPCON CORP [JP]	Plant sensor
WO2025037159A1	INTELLIGENT AGRICULTURAL SOLUTIONS LLC [US]	Methods of analyzing liquid in an agricultural liquid applicator
WO2025017017A1	VITALFLUID B V [NL]	Fertilisation and disinfection system using plasma activated water
WO2025012917A1	DAIRYCS AUTOMATIC MILKING LTD [IL]	Means and methods for cooling farm animals
WO2025045828A1	BASF AGRO TRADEMARKS GMBH [DE]	Machinery sensor set-up
WO2025027407A1	AGCO INT GMBH [CH]	Agricultural system and method for an agricultural task management
WO2025013406A1	SONY GROUP CORP [JP]	Sensor device

WO2025012407A1	PETERSIME NV [BE]; UNIV HASSELT [BE]; IMEC VZW [BE]	Method and assembly for evaluating an eggshell temperature
WO2025042710A1	DONALDSON CO INC [US]	Systems and methods for pulse jet filter element cleaning in agricultural equipment
WO2025024847A1	ANDERSEN BRIAN [US]; ISAACSON ALAN COOPER [US]; HILL TYLER JUSTICE [US]; EMORY RYAN PATRICK [US]	Autonomously guided, continuous movement harvester
WO2025017004A1	PARDELL RICARD [ES]	Device for measuring soil organic carbon by concentrated laser induced combustion
WO2025040329A1	PHINIA DELPHI LUXEMBOURG SARL [LU]	Method and control unit for controlling a spray unit of an agricultural spraying system
WO2025024708A1	MONSANTO TECHNOLOGY LLC [US]	Methods and systems for use in processing image data containing position data
WO2025046284A1	2541980 ALBERTA LTD [CA]	Predictive failure system, apparatus and method for hydrostatic transmissions
WO2025003841A1	ASSOCIACAO BIOPOLIS [PT]; UNIV SOUTHAMPTON [GB]; MARINE BIOLOGICAL ASS [GB]	Monitoring device for a marine animal
WO2025012903A1	B G NEGEV TECH AND APPLICATIONS LTD [IL]	Fouling sensors for water filtration membranes and methods of using the same
WO2025040705A1	AMS OSRAM INT GMBH [DE]	Beam steering system and light emission system
WO2025029708A2	LEAFTECH AG INC [US]	Portable devices and systems for measuring plant health
WO2025029945A1	SENTINEL FERTIGATION INC [US]	Augmented simulant calibration of geospatial data for property quantification
WO2025042836A1	MONSANTO TECHNOLOGY LLC [US]	Methods and compositions for short stature plants through manipulation of gibberellin metabolism to increase harvestable yield
WO2025034299A1	QUALCOMM INC [US]	Configuration data compression
WO2025005813A1	AXIS7 LTD [NZ]	Crop harvesting systems and methods
WO2025015166A1	REBEL CULTURES LLC [US]	Plant tissue culture devices and methods
WO2025051387A1	MILKLINE NG S P A [IT]	Device for detecting parameters in the automatic milking operations of animals
WO2025012914A1	VETREAT LTD [IL]	Autonomous system and methods thereof for treatment and injection of medicaments, beneficial agents and the like in livestock and wild animals
WO2025010003A1	DELAVAL HOLDING AB [SE]	Arrangement and method for controlling milking vacuum levels
WO2025041048A1	HALTER USA INC [US]	Livestock guidance device and method therefor
WO2025018611A1	KIM SANG KYU [KR]	Companion animal management system and device, and method therefor
WO2025015075A1	ANVIGEN LLC [US]	Biodegradable, partially-open, hollow reservoirs

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REDES DE SENSORES PARA ENTORNOS URBANOS O PÚBLICOS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO2025006330A1	QUALCOMM INC [US]	Reconfigurable carrier aggregation mmwave receiver architecture
WO2025007312A1	BEIJING XIAOMI MOBILE SOFTWARE CO LTD [CN]	Communication method, station device, access point device, and communication system
WO2025034148A1	ERICSSON TELEFON AB L M [SE]	Confirmed delivery of messages in an internet of things architecture involving application layer protocol mapping
WO2025025019A1	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD [CN]	Demodulation method, and device
WO2025024784A1	INTERDIGITAL PATENT HOLDINGS INC [US]	User consent policy management
WO2025000541A1	NEC CORP [JP]; WANG GANG [CN]	Devices and methods for communication
WO2025027480A1	ERICSSON TELEFON AB L M [SE]	Ue feedback of downlink frequency differences between trps
WO2025038202A2	QUALCOMM INC [US]	Multiple access point (ap) association
WO2025026636A1	AMS OSRAM AG [AT]	2d tdc arrangement
WO2025048509A1	SAMSUNG ELECTRONICS CO LTD [KR]	Method and apparatus for supporting ultra wideband positioning in wireless communication system
WO2025010693A1	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD [CN]	Information feedback method and apparatus, information analysis method and apparatus, device, and storage medium
WO2025011757A1	SONOBEACON GMBH [DE]	Method and system for means-of-transport usage analysis
WO2025021542A1	SIGNIFY HOLDING BV [NL]	Wind monitoring arrangement
WO2025038611A2	QUALCOMM INC [US]	Radio frequency sensing transmission scheduling
WO2025030862A1	HONOR DEVICE CO LTD [CN]	Communication method and apparatus
WO2025020067A1	QUALCOMM INC [US]; LEE HYOJIN [US]; ZHANG YU [US]; WU ZHIKUN [CN]; GAAL PETER [US]	Channel state feedback to support cooperation between multiple ris nodes
WO2025052210A1	NOKIA TECHNOLOGIES OY [FI]	Measurement configuration
WO2025032377A1	REBERNIG SUPERVISIONI SRL [IT]	Adaptive lighting control method, adaptive lighting system
WO2025008653A1	COMMSIGNIA KFT [HU]	Method, system, computer program product and computer readable medium for traffic prediction
WO2025031037A1	HUAWEI TECH CO LTD [CN]	Communication method and apparatus
WO2025015412A1	SENSODRIVE TECH CORP [CA]	System and method for efficient utilization of amenities
WO2025053809A1	UNIV ISTANBUL MEDIPOL [TR]	A relaying method for lora networks
WO2025024964A1	NOKIA SHANGHAI BELL CO LTD [CN];	Integrated sensing and communication mode switch

	NOKIA SOLUTIONS & NETWORKS OY [FI]	
WO2025000029A1	FIBER SENSE LTD [AU]	Method and/or system for reducing number of redundant cable paths in an optical network
WO2025008478A1	SCHREDER ILUMINACAO SA [PT]	Method for optimization of sensor network placement
WO2025043221A2	ARCHETYPE AI INC [US]	Integrated multimodal neural network platform for generating content based on scalable sensor data
WO2025018574A1	SAMSUNG ELECTRONICS CO LTD [KR]	Foldable electronic device and method for providing image of foldable electronic device
WO2025014528A1	GREATER SHINE LTD	Methods and systems for estimating motion directions
WO2025009739A1	SAMSUNG ELECTRONICS CO LTD [KR]	Content output device, content output system comprising same, and operation method thereof
WO2025005432A1	SAMSUNG ELECTRONICS CO LTD [KR]	Electronic device including fingerprint sensor
WO2025021130A1	CALTERAH SEMICONDUCTOR TECH SHANGHAI CO LTD [CN]	Target detection method, integrated circuit, sensor, device, and medium
WO2025045606A1	WESTIRE TECH LIMITED [IE]	Photocell enclosure comprising an integrated photocell and led driver circuit
WO2025005476A1	SAMSUNG ELECTRONICS CO LTD [KR]	Camera module and electronic device including same

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REDES DE SENSORES PARA DETECTAR INCENDIOS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO2025005631A1	WEBGATE INC [KR]	Network camera using flame sensitivity gauge and fire detection method using same
WO2025034148A1	ERICSSON TELEFON AB L M [SE]	Confirmed delivery of messages in an internet of things architecture involving application layer protocol mapping
WO2025029241A1	SAZONOV VOLODYMYR VOLODYMYROVY CH [UA]	Security system with boiler monitoring function
WO2025049637A1	ERICSSON TELEFON AB L M [SE]; VANUKURU RISHI RAMA RAO [US]; PHILLIPS GREGOIRE	System and method for multi-modal adaptive spatial remote communication
WO2025024886A1	SHEPHERD MONITORING SYSTEMS PTY LTD [AU]	Sensor system
WO2025014004A1	KIM JI TAE [KR]	Off-gas-based battery thermal runaway monitoring system and battery extinguishing system
WO2025046561A1	SHEEDY THOMAS [IE]; SHEEDY EOGHAN [IE]; SHEEDY ENDA [IE]; SHEEDY UNA [IE]; OCONNELL ANNE [IE]; HERBERT MICHAEL [IE]; MOLYNEAUX TIMOTHY [IE]	A fire protection and monitoring system and method
WO2025048970A1	WILDSTAR LLC [US]	Forest fire detection system and method
WO2025028259A1	SONY SEMICONDUCTOR SOLUTIONS CORP [JP]	Sensor device, control method, and program
WO2025042366A1	TATAS ZUEMRA MIHRA [TR]	Innovation in fire extinguishing device
WO2025019390A1	BOURNS INC [US]	High temperature co-fired ceramic pressure sensor
WO2025010042A1	TUSAS TURK HAVACILIK VE UZAY SANAYII ANONIM SIRKETI [TR]	A payload carrying system
WO2025029026A1	CONSTANTEC CO LTD [KR]	Solid state 3d lidar scanner and system

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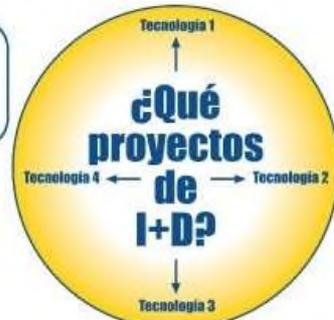
OTRAS REFERENCIAS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO2025028077A1	TERRA LABO INC [JP]	Monitoring system, monitoring method, and monitoring program
WO2025038022A1	ERICSSON TELEFON AB L M [SE]	Full power mode 1 non-coherent codebook for 8 tx ue
WO2025010047A1	TURKIYENIN OTOMOBILI GIRISIM GRUBU SANAYI VE TICARET ANONIM SIRKETI [TR]	A system for providing insurance and vehicle maintenance suggestions by analyzing driver behaviour
WO2025035167A1	FLEET SPACE TECH PTY LTD [AU]	Compact satellite-enabled seismic sensor node
WO2025001786A1	SHENZHEN YINWANG INTELLIGENT TECH CO LTD [CN]	Data processing method and apparatus, and vehicle
WO2025019129A1	ORACLE INT CORP [US]	Electrical grid edge event detection and mitigation
WO2025037046A1	TAMPEREEN YLIOPISTO [FI]	Biopolymeric optical fiber for humidity sensing
WO2025010053A2	BTS KURUMSAL BILISIM TEKNOLOJILERI ANONIM SIRKETI [TR]	Cyber threat prediction system and method thereof
WO2025049008A1	SIEMENS INDUSTRY INC [US]	False alarm detection and diagnostics
WO2025024860A1	QOMPLX LLC [US]	System and method for track and trace user and entity behavior analysis
WO2025053932A1	KYOCERA SLD LASER INC [US]	Underwater laser communication or sensing system and method
WO2025050067A1	STRONG FORCE VCN PORTFOLIO 2019 LLC [US]	Systems, methods, kits, and apparatuses for specialized chips for robotic intelligence layers
WO2025013862A1	DENSO CORP [JP]	Detection device
WO2025043175A1	CIENA CORP [US]	Environmental disturbance detection and localization using coherent modem
WO2025000029A1	FIBER SENSE LTD [AU]	Method and/or system for reducing number of redundant cable paths in an optical network
WO2025004609A1	DENSO CORP [JP]	Processing system, processing method, and processing program
WO2025014218A1	KIM DEOG YI [KR]	Road rainwater drainage device
WO2025059284A1	BATTELLE MEMORIAL INSTITUTE [US]	Drone assisted rapid triage
WO2025000084A1	KWESST INC [CA]	Battlefield laser detection equipment module and system comprising the same
WO2025045349A1	ABB SCHWEIZ AG [CH]	Influencing a mining process
WO2025050094A1	FLUID PHOTONICS CORP [US]	System for computer-assisted in-process optimization of mineral solution extraction
WO2025024626A1	UNIV SOUTH FLORIDA [US]	Surface modified carbon quantum dots and methods of making and use thereof

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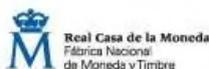
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Los ITPs** de la OEPM detectaron solicitudes de patente relevantes cuando estábamos a mitad del proyecto y gracias a ello pudimos reconducir nuestra investigación.



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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