

Boletín VT

REDES DE SENsoRES INALÁMBRICAS

48

4.º trimestre 2021

Vigilancia Tecnológica

Desde su aparición, los campos de aplicación de las redes de sensores inalámbricas 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 inalámbricas, 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: 116-19-015-9



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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 2021222712 A1	KINZE MFG INC	Connected planter data sharing playthrough
WO 2021188380 A1	LI COR INC	Gas exchange transient buffering systems and methods
WO 2021191772 A1	TATA CONSULTANCY SERVICES LTD	Method and system for crop loss estimation
WO 2021181131 A1	RASTOUTSAU ULADZIMIR	Animal health monitoring system
WO 2021220035 A1	ABB SCHWEIZ AG	Method and system for monitoring quality of a commodity in a plurality of process phases
WO 2021190966 A1	BAYER AG	Method, vehicle and system for weed control management
WO 2021219427 A1	SIGNIFY HOLDING BV	Horticulture system and method
WO 2021221689 A1	PIVOT BIO INC	Measurement of nitrogen fixation and incorporation
WO 2021191714 A1	UNIV KING ABDULLAH SCI & TECH	Red palm weevil detection by applying machine learning to signals detected with fiber optic distributed acoustic sensing
WO 2021202065 A1	X DEV LLC	System for beehive health and activity monitoring
WO 2021188735 A1	HEARTLAND AG TECH INC	Systems and methods for predictive irrigation system maintenance
WO 2021192234 A1	NILEWORKS INC	Drone for spraying liquid and method for controlling drone
WO 2021201750 A1	DELAVAL HOLDING AB	A milking arrangement
WO 2021216655 A1	OPTI HARVEST INC	Agricultural data integration and analysis platform
WO 2021206173 A1	PLANTX CORP	Plant cultivation device and plant cultivation method
WO 2021205442 A1	BUMBLEBEE A I LTD	Methods for artificial pollination and apparatus for doing the same
WO 2021205315 A1	OEPP INNOVATIONS PRIVATE LTD	System, device facilitating scheduling of irrigation and method thereof
WO 2021182695 A1	THINKFORBL CO LTD	System for detecting diarrhea and predicting diarrhea risk level in livestock, and method for using same
WO 2021216217 A1	MICROSOFT TECHNOLOGY LICENSING LLC	Predicted forecast offset from remote location sensor
WO 2021217226 A1	STARA S/A IND DE IMPLEMENTOS AGRICOLAS	System for synchronizing agricultural equipment or machines
WO 2021194898 A1	IUNU INC	Crowdsourced informatics for horticultural workflow and exchange
WO 2021214557 A1	PREC PLANTING LLC	High and low frequency soil and plant analysis systems with integrated measurements
WO 2021211276 A1	FLUENCE BIOENGINEERING INC	Photoperiod manipulation
WO 2021217215 A1	FLEET SPACE TECH PTY LTD	Leo satellite communication systems and methods
WO 2021181403 A1	NATIONAL INSTITUTE OF PLANT GENOME RES	System for delaying ripening of agricultural produces
WO 2021207468 A1	KINZE MFG INC	Simultaneous mapped view of historical and real-time geospatial and non-geospatial data

<u>WO 2021191212 A1</u>	SIGNIFY HOLDING BV	Horticulture master and slave lighting devices
<u>WO 2021206570 A1</u>	JUANICO DRANDREB EARL	Predictive chromatography of organic plant extracts
<u>WO 2021245056 A1</u>	CEVA SANTE ANIMALE	Method for monitoring the feeding and water consumption of an animal
<u>WO 2021239458 A1</u>	EVONIK OPERATIONS GMBH	Method of controlling and managing a production cycle of a livestock farm
<u>WO 2021243428 A1</u>	XMOBOTS AEROESPACIAL E DEFESA LTDA	Remotely piloted aircraft suitable for aerial survey and spraying activities, and aerial survey and spraying system
<u>WO 2021228950 A1</u>	SYNGENTA CROP PROTECTION AG	A pest monitoring device
<u>WO 2021223902 A1</u>	STROTHMANN WOLFRAM	Multirow machine and method for mechanically regulating weeds and pests
<u>WO 2021231371 A1</u>	HEARTLAND AG TECH INC	Predictive maintenance systems and methods to determine end gun health
<u>WO 2021244886 A1</u>	AMAZONEN WERKE H DREYER SE & CO KG	Agricultural attachment for cultivating row crops
<u>WO 2021247482 A1</u>	SCYTHE ROBOTICS INC	Autonomous lawn mowing system
<u>WO 2021184130 A1</u>	TECH INTELIA INC	Method and apparatus for long term accurate measurement of ammonia gas concentration in a permanent ammonia gas environment
<u>WO 2021229284 A1</u>	UNIV KING ABDULLAH SCI & TECH	THE INTERNET OF FLORA THINGS (ioft)
<u>WO 2021225735 A1</u>	VALMONT INDUSTRIES	System, method and apparatus for irrigation control and data management
<u>WO 2021234063 A1</u>	CARBON BEE	Method and system for controlling an agricultural treatment
<u>WO 2021239972 A1</u>	BASF AGRO TRADEMARKS GMBH	A method for an "on-the-fly" treatment of an agricultural field using a soil sensor
<u>WO 2021244897 A1</u>	PLANTCARE AG	Moisture measuring device having an antibacterial effect
<u>WO 2021223002 A1</u>	LEITE ROSA ALEXANDRE	Flow sensor
<u>WO 2021244887 A1</u>	AMAZONEN WERKE H DREYER SE & CO KG	Method for cultivating row crops
<u>WO 2021247790 A1</u>	FIREFLY AUTOMATIX INC	Performing low profile object detection on a mower
<u>WO 2021230801 A1</u>	DELAVAL HOLDING AB	A milking arrangement comprising a cleaning arrangement
<u>WO 2021233926 A1</u>	SIGNIFY HOLDING BV	Systems and methods for automatically grading cannabis plants and adjusting control parameters
<u>WO 2021250241 A1</u>	KWS SAAT SE & CO KGAA	Method and system for managing agricultural processes
<u>WO 2021250875 A1</u>	NIPPON TELEGRAPH & TELEPHONE	Wild animal monitoring system and monitoring control device, method and program thereof
<u>WO 2021241093 A1</u>	NTT DOCOMO INC	Control device
<u>WO 2021222279 A1</u>	RAVEN IND INC	Object detection and tracking for automated operation of vehicles and machinery
<u>WO 2021236012 A1</u>	RIPE FRESH PTE LTD	System for cultivation of plants
<u>WO 2021229277 A1</u>	UNIV DE TRAS OS MONTES E ALTO DOURO	Control and operating system for the aging of fortified, still and late harvest wines, spirits, and vinegars
<u>WO 2021235158 A1</u>	KONICA MINOLTA INC	Fluorescent fingerprint image acquisition device
<u>WO 2021229248 A1</u>	FEVGAS GEORGIOS	Method for detection and classification of biotic - abiotic stress in crops from thermal photographs using artificial intelligence
<u>WO 2021226273 A1</u>	GALLO WINERY E & J	System and method for managing and processing agricultural field data

[...ver más](#)

REDES DE SENSORES PARA ENTORNOS URBANOS O PÚBLICOS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO 2021183081 A1	EVREN IDRIS	Key communication system and method for smart water treatment device
WO 2021198466 A1	SECURAXIS SA	Apparatus for controlling an independent electrical device and method to control an independent electrical device
WO 2021202436 A1	UBICQUIA LLC	Apparatus and method for selectively coupling a dali-compatible controller and/or a dali-compatible power supply to a dali network bus through a powerline interface of a smart control device
WO 2021199938 A1	UNIV KYOTO	Blockchain network system
WO 2021209821 A1	QUAKESAVER GMBH	Vibration information collecting device and vibration information collecting system
WO 2021186762 A1	HITACHI LTD	Maintenance assistance system and maintenance assistance method
WO 2021211144 A1	SAUDI ARABIAN OIL CO	Parking control system, parking control method, and mobile robot device
WO 2021202435 A1	UBICQUIA LLC	Smart sensor device and antenna structure for use therewith
WO 2021183797 A1	THIRDBIN INC	System and method of composting
WO 2021179037 A1	PETRA IP GROUP PTY LTD	Methods and systems for dynamically processing waste
WO 2021202615 A2	JMAEV JACK IVAN	Method and apparatus for providing infrastructure processing and communications
WO 2021246935 A1	AQUA ROBUR TECH AB	Combined sewer overflow sensor system and methods
WO 2021247448 A1	INTEL CORP	Federated learning optimizations
WO 2021175395 A1	SENECO AS	System and method for accurate motion detection
WO 2021252991 A1	AERODEFENSE	Sensor network system and deployment for object detection, tracking and mitigation
WO 2021252219 A1	CHARTER COMMUNICATIONS OPERATING LLC	Method and framework for internet of things network security
WO 2021246860 A1	MIMOS BERHAD	System and method for managing streetlights
WO 2021239993 A1	SCHREDER SA	Luminaire system and network of luminaire systems for disinfecting areas
WO 2021232016 A1	PHYN LLC	Liquid flow processing for plumbing systems
WO 2021236162 A1	INTEL CORP	Federated mec framework for automotive services
WO 2021183339 A1	COMMSCOPE TECHNOLOGIES LLC	Smart pole based incident detection and alerting system

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REDES DE SENSORES PARA DETECTAR INCENDIOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO 2021185839 A1	BSS SONDERLOESCH ANLAGEN GMBH	Fire protection control device, fire protection device, fire protection control method
WO 2021213737 A1	SIEMENS AG	Automatic navigation system for fire fighting robot
WO 2021211307 A1	NEC LAB AMERICA INC	High dynamic range distributed temperature sensing (dts) using photon counting detection
WO 2021201369 A1	FS INC	Fire outbreak prediction system and method therefor
WO 2021211392 A1	NEC LAB AMERICA INC	Improved distributed fiber optic sensing of temperature using a polarization scrambler
WO 2021248143 A2	SUPINGER KEVIN SCOTT	Sensor multistage data concentration
WO 2021216116 A1	CEDARZ GROUP LLC	Electronic breathing mask with uvc air purification system and peripherals
WO 2021217035 A1	HENKE MIKE	Leak rate monitoring for a fire sprinkler system
WO 2021219704 A1	MINIMAX VIKING RES & DEV GMBH	Method and system for monitoring a fire protection installation, and corresponding fire protection installation
WO 2021201084 A1	PANASONIC IP MAN CO LTD	Display device and program
WO 2021194849 A1	UNIV PORTLAND STATE	Real-time wildfire detection
WO 2021187715 A1	LG ENERGY SOLUTION LTD	Apparatus and method for battery abnormal condition prediction, and battery management system providing same method
WO 2021191668 A1	GEORGI MOURAD	Sprinkler with hydraulic remote thermal sensor
WO 2021220108 A1	3M INNOVATIVE PROPERTIES CO	Detecting core body temperature based on sensed exhaled breath in a ppe respirator device
WO 2021224223 A1	ERICSSON TELEFON AB L M	Network resource allocation for public safety communications
WO 2021207557 A1	FLIR COMM SYS INC	Multispectral imaging for thermal and electrical detection systems and methods
WO 2021211409 A1	TEXAS INSTRUMENTS INC	System-on-chip for a smoke alarm
WO 2021225933 A1	QUALCOMM INC	Fire warning system and devices
WO 2021207005 A1	NEC LAB AMERICA INC	Smart stadium applications using fiber optic sensing
WO 2021224226 A1	AVIATION WORKS LTD	Rebreather apparatus
WO 2021224752 A1	ARGUS SECURITY S R L	Security system, preferably a fire alarm system, and method for managing the communication of such a security system
WO 2021173324 A1	SCHWEITZER ENGINEERING LAB INC	Fire risk mitigation in electric power systems
WO 2021235594 A1	HA NEUNG GYO	Emergency generator remote monitoring system
WO 2021237502 A1	SHENZHEN FANHAI SANJIANG ELECTRONICS CO LTD	Fire detector for preventing false alarms and method of use
WO 2021234669 A1	TYCO FIRE PRODUCTS LP	Normally closed valve for dry pipe trim on a diaphragm valve

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OTRAS REFERENCIAS

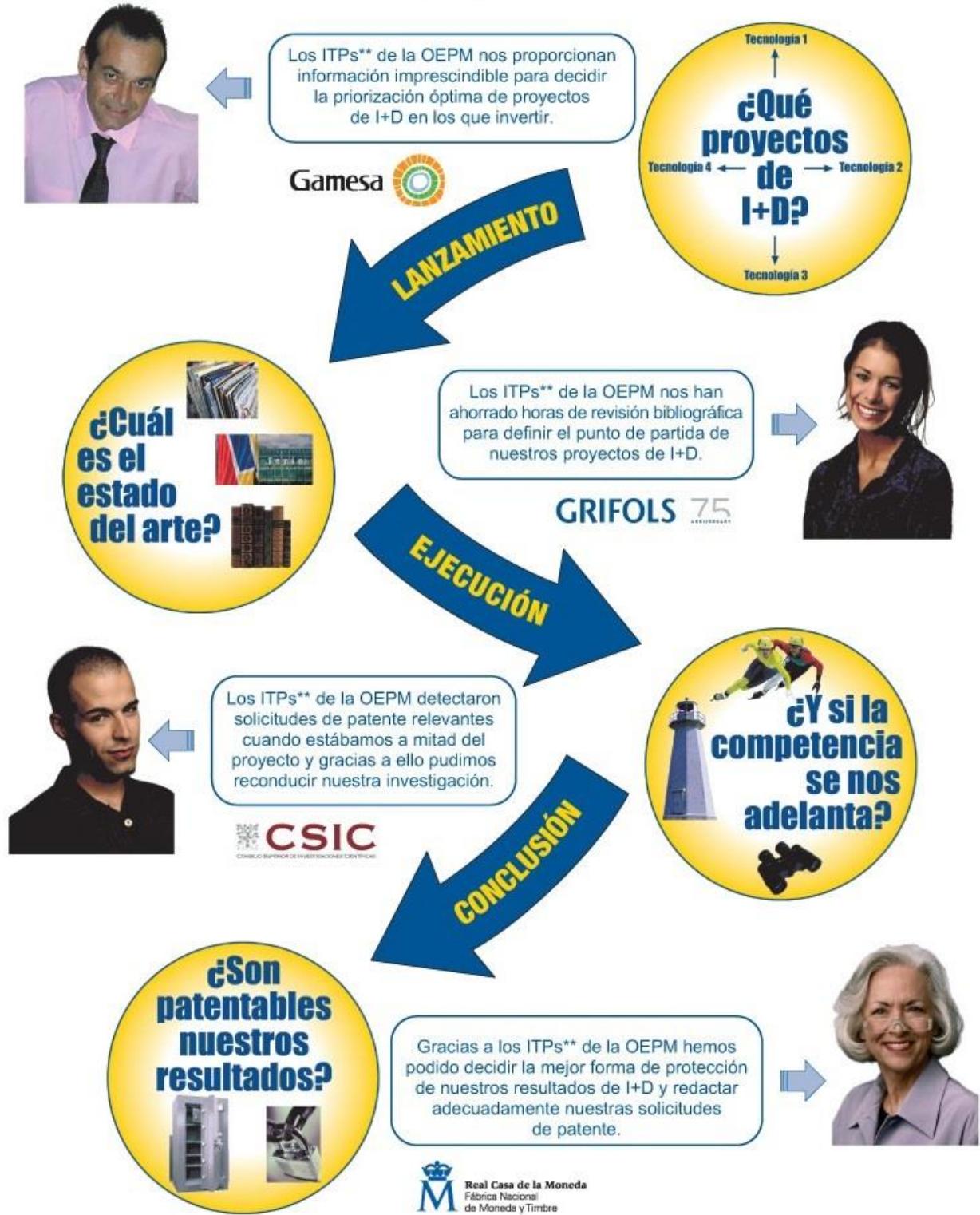
Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<u>WO 2021220000 A1</u>	AIRBUS DEFENCE & SPACE LTD	Bandwidth allocation
<u>WO 2021205621 A1</u>	HITACHI LTD	Noise monitoring device and noise monitoring method
<u>WO 2021195002 A1</u>	TRACKONOMY SYSTEMS INC	Wireless sensor nodes for equipment monitoring
<u>WO 2021201896 A1</u>	WESTERN DIGITAL TECH INC	Sensor system with low power sensor devices and high power sensor devices
<u>WO 2021214694 A1</u>	3M INNOVATIVE PROPERTIES CO	Mask
<u>WO 2021221976 A1</u>	BECKMAN COULTER INC	Mesh network system of environmental monitoring devices
<u>WO 2021192040 A1</u>	MITSUBISHI ELECTRIC CORP	Bias circuit, sensor device, and wireless sensor device
<u>WO 2021196567 A1</u>	NANJING JONQUIL CONSTRUCTION TECH CO LTD	Apparatus and method for determining weather conditions on the basis of sensor
<u>WO 2021204144 A1</u>	ALIBABA GROUP HOLDING LTD	Data processing system and method, sensor, mobile acquisition backpack, and device
<u>WO 2021185594 A1</u>	SIEMENS GAMESA RENEWABLE ENERGY AS	Method for computer-implemented controlling of one or more wind turbines in a wind farm
<u>WO 2021211390 A1</u>	NEC LAB AMERICA INC	Smart refrigeration using distributed fiber optic sensing
<u>WO 2021197744 A1</u>	SIEMENS GAMESA RENEWABLE ENERGY AS	Method for operating a wind turbine with controlled operation of sensors
<u>WO 2021205197 A1</u>	SAYEADAHMAD MOHAMMAD	Wireless dimple for fish hook
<u>WO 2021199269 A1</u>	MITSUBISHI ELECTRIC CORP	Communication terminal, communication system, power-saving control method, and power-saving control program
<u>WO 2021211532 A1</u>	MICRON TECHNOLOGY INC	Apparatuses and methods for inference processing on edge devices
<u>WO 2021212203 A1</u>	SYSTEMS WITH INTELLIGENCE INC	Apparatus and system for use in operation of sensors in a scada network
<u>WO 2021206698 A1</u>	COSTABILE MICHAEL JOSEPH	System and method for collecting data in a live sporting event
<u>WO 2021213873 A1</u>	FOS4X GMBH	Method for monitoring a wind turbine, system for monitoring a wind turbine, wind turbines, and computer programme product
<u>WO 2021180466 A1</u>	TRIDONIC GMBH & CO KG	Method for grouping luminaires
<u>WO 2021179062 A1</u>	REDLORE	Method and system for changing the behavior of a connected field device
<u>WO 2021191360 A1</u>	TOTAL SE	Drone for measuring data representative of the content of at least two gases present in the atmosphere away from the ground and associated measurement method
<u>WO 2021210019 A1</u>	TATA CONSULTANCY SERVICES LTD	Method and system for material balance and data reconciliation in a plant
<u>WO 2021221930 A1</u>	AMAZON TECH INC	Threat sensor deployment and management
<u>WO 2021221870 A1</u>	GLOBAL WEATHER CORP	Using mobile data to improve weather information
<u>WO 2021233864 A1</u>	THALES SA	Automatic alarm scheduling method and system
<u>WO 2021222104 A1</u>	UNIV CALIFORNIA	Systems and methods for coherent radiation from a swarm of wirelessly powered and synchronized sensor nodes
<u>WO 2021225191 A1</u>	LG ELECTRONICS INC	Method and device for generating user identification model on basis of wireless sensing
<u>WO 2021230465 A1</u>	SAMSUNG ELECTRONICS CO LTD	Optical sensor

<u>WO 2021201839 A1</u>	ELEMENTAL MACHINES INC	Emperical data management systems and methods of use
<u>WO 2021211337 A1</u>	ECOLINK INTELLIGENT TECHNOLOGY INC	Method and apparatus for performing timed functions in a wireless electronic device
<u>WO 2021230631 A1</u>	ATOMY CO LTD	Self-diagnostic system for home appliance, and operation method for same
<u>WO 2021234334 A1</u>	SPEIR HUNTER LTD	Stress concentration mapping in insulated pipework
<u>WO 2021250465 A1</u>	HVGRID TECH INC	Device with health monitoring
<u>WO 2021248002 A1</u>	ADEMCO INC	Determining rotation using sensor displaced from magnet
<u>WO 2021242289 A1</u>	MASSACHUSETTS INST TECHNOLOGY	System and method for providing real-time prediction and mitigation of seismically-induced effects in complex systems
<u>WO 2021239279 A1</u>	VENTUS ENG GMBH	Method of and system for monitoring and diagnosing a grounding system, use of rotating electrostatic motor to diagnosing
<u>WO 2021247898 A1</u>	CAPITAL ONE SERVICES LLC	A network monitoring device, and applications thereof
<u>WO 2021250525 A1</u>	NEXTNAV LLC	Constraining barometric pressure sensor calibration with sporadic data collection
<u>WO 2021233957 A1</u>	AMBISENSE LTD	Air quality monitoring device and system
<u>WO 2021242786 A1</u>	TRACKNOMY SYSTEMS INC	Detecting tampering in assets and authenticating authorized users
<u>WO 2021248030 A1</u>	WOOD DONALD G	Hail damage detection system and method of use
<u>WO 2021225812 A1</u>	UOP LLC	Real-time plant diagnostic system and method for plant process control and analysis
<u>WO 2021246970 A1</u>	CHORD X PTE LTD	System to acquire and process signals for monitoring performance of vessel parts using rule-based anomaly detection
<u>WO 2021225659 A2</u>	PERCEPTIVE INC	Centralized object detection sensor network system
<u>WO 2021231940 A1</u>	WASTEWIZER LLC	Indirect weight measurement systems and processes
<u>WO 2021206654 A2</u>	ATEZ YAZILIM TEKNOLOJILERI AS	Designing export platform with improved blockchain and internet of things structure
<u>WO 2021225269 A1</u>	LG ELECTRONICS INC	Apparatus and method for controlling electronic device at home, on basis of smart mat, and apparatus and method for controlling the smart mat
<u>WO 2021230408 A1</u>	GLUESYS CO LTD	Intelligent sensor including sensor error monitoring function, and implementation method therefor
<u>WO 2021228439 A1</u>	ABB POWER GRIDS SWITZERLAND AG	Electromagnetic device equipped with at least one wireless sensor
<u>WO 2021224718 A1</u>	TECSYSTEM S R L	System and probe thereof for monitoring electrical substations
<u>WO 2021225584 A1</u>	HITACHI AMERICA LTD	A robust two-in-one sensor signal acquisition method for online manufacturing process and tool condition monitoring system
<u>WO 2021234438 A1</u>	ERICSSON TELEFON AB L M	Intent-aware data preservation in edge cloud environments
<u>WO 2021221736 A2</u>	INTEL CORP	Edge computing in satellite connectivity environments
<u>WO 2021225270 A1</u>	LG ELECTRONICS INC	Device and method for controlling smart mat
<u>WO 2021225610 A1</u>	SAUDI ARABIAN OIL CO	Method and system for mapping underground sensors onto a network map
	ARAMCO SERVICES CO	
<u>WO 2021239973 A1</u>	KONUX GMBH	Automatic real-time data generation
<u>WO 2021237486 A1</u>	QUALCOMM INC	User equipment capability for wireless sensing
<u>WO 2021246607 A1</u>	TO21 COMMS CO LTD	Autonomous iot device control system and autonomous control method using same
<u>WO 2021237468 A1</u>	WANG JING	Intelligent ambient temperature sensor
<u>WO 2021212292 A1</u>	ABB SCHWEIZ AG	Wireless sensing apparatus on bushing
<u>WO 2021216591 A1</u>	REAL BIG WAVES LLC	Systems and methods for providing computer displays in aquatic environments
<u>WO 2021230970 A1</u>	SAUDI ARABIAN OIL CO	Systems and methods for dynamic real-time water-cut monitoring
<u>WO 2021241456 A1</u>	ALPS ALPINE CO LTD	Wireless sensor device, wireless communication system, and wireless communication method
<u>WO 2021250868 A1</u>	NIPPON TELEGRAPH & TELEPHONE	Decompression feasibility determination method, decompression feasibility determination device, and program
<u>WO 2021241624 A1</u>	NEC CORP	Data collection method, sensor device, server device, visualization system, and non-transitory computer-readable medium

<u>WO 2021212005 A1</u>	SENSORMATIC ELECTRONICS LLC	Building system with sensor-based automated checkout system
<u>WO 2021241579 A1</u>	DAICEL CORP	Abnormal modulation cause identifying device, abnormal modulation cause identifying method, and abnormal modulation cause identifying program
<u>WO 2021237495 A1</u>	QUALCOMM INC	Wideband sensing reference signal
<u>WO 2021234623 A1</u>	CRON SYSTEMS PVT LTD	System and method for transposition of a detected object and its tracking to a different device

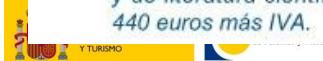
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