



SMARTTECH
CLUSTER



Boletín de Vigilancia Tecnológica

FEBRERO - MARZO 2021

SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

ÍNDICE

NOTICIAS

1. The future is KNX	2
2. Smart quantum technologies for secure communication	2
3. 'Swarmalation' used to design active materials for self-regulating soft rob...	3
4. Bringing cities back smarter and more sustainably	3
5. How to boost hospital building safety and asset maintenance	4
6. Controlled by light alone, new smart materials twist, bend and move	4
7. Connected buildings: The first step towards the future of smart cities	5
8. How Intelligent Traffic Management Systems Enable Smarter Use of Transport?	5
9. Scientists create armour for fragile quantum technology	6
10. New photonics research makes smaller, more efficient virtual and augmented ...	6

EMPRESAS Y MERCADOS

11. Microsoft wins \$22 billion deal making headsets for US Army	7
12. Scout: The Tiny AI-powered Autonomous Mobile Robot for home	7
13. Integration between Aperio wireless locks and AXIS Entry Manager software	8
14. SmartSafe City Solutions Market to Soar Globally as Governments Increase Pu...	8
15. Banks must sustain digital momentum in 2021	9
16. Elon Musk is serious about crypto as Tesla puts \$1.5 billion in bitcoin	9
17. Cyber Intelligence Briefing: 5 February 2021	9
18. Ericsson on 2021: The year Industry 4.0 takes off – rocket-fuelled by priva...	10

PATENTES

19. Computerised system to provide assistance to a person, in particular to a b...	11
20. Method and device for generating a building automation project	11
21. Smart mask and exposure device thereof, exposure method, and exposure patte...	12
22. Circadian lighting in a diverse home automation system	12
23. Smart window with integral cleaning system	13
24. System and method for assuring building air quality	13

ÍNDICE

25. Systems and methods of verifying installation of building automation device...	14
26. Photovoltaic solar collection system and natural illumination apparatus for...	14
27. Closed panel building systems	15
28. Detecting abnormal behavior in smart buildings	15
29. In-home relay device and electronic device connected thereto	16
30. Occupant monitoring method and system for building energy management	16
31. Redundant control for wireless devices in a home automation system	17
32. Smart-home device placement and installation using augmented-reality visual...	17
33. Three dimensional virtual room-based user interface for a home automation s...	18
34. Building model generation and intelligent light control for smart windows	18
35. Building energy management system	19
36. Method and apparatus for controlling smart home device	19
37. Method of automatic configuration of network address of a communicating ele...	20
38. Quantum dot organic light emitting diode display panel	20
39. Smart loss-proof luggage case and alarm method	21
40. System and method for configuring analytic rules to equipment based upon bu...	21
41. Systems and methods of using a blockchain to secure a building management s...	22
42. System for guidance and deployment of active panels on building walls	22
43. Systems and methods for home automation scene control	23
44. Building control system with constraint generation using artificial intelli...	23
45. Display device and artificial intelligence server capable of controlling ho...	24
46. User Profiles for Optimized Smart Buildings	24
47. Real time monitoring of face recognition based home automation system for e...	25
48. Three-dimensional space wall-climbing polishing robot and polishing efficie...	25
49. Home automation system	26
50. Additive manufacturing apparatus and method	26
51. Building HVAC system with modular cascaded model	27
52. Device for coupling a solar panel to an inverter and a system formed thereb...	27
53. Integrated heat management for a building	28
54. Method and System for Providing A Speech-Based Service, in Particular for t...	28

ÍNDICE

55. Building automation system for controlling conditions of a room	29
---------------------------------------------------------------------	----

PUBLICACIONES CIENTÍFICAS

56. A Framework for Energy-Efficiency in Smart Home Environments	30
57. Privacy-Enabled Smart Home Framework with Voice Assistant	30
58. Older Adults' Perspectives of Smart Home Technology:Are We Developing the T...	31
59. Smart-Building Applications:: Deep Learning-Based, Real-Time Load Monitorin...	31
60. Internet of Things for enabling smart environments: a technology-centric pe...	32
61. The AXIOM project: IoT on heterogeneous embedded platforms	32
62. Stochastic interval-based optimal offering model for residential energy man...	33
63. Bringing 5G Into User's Smart Home	33
64. Automation Smartlock for Implementing Smarthome Security Using Location Bas...	34
65. Smart home power management system for electric vehicle battery charger and...	34
66. Privacy-by-design for Internet of Things (IoT): Implementing user autonomou...	35
67. Key determinants for the slow pace of smart home adoption : a study of digi...	35
68. A four-qubit germanium quantum processor	36

NOTICIAS

The future is KNX

Publicada en <https://www.knxuk.org>, 25/03/2021.

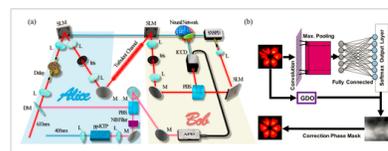
KNX UK Annual Conference reflects confidence in a secure future. The KNX UK Annual Conference [25 March] focussed on the continuing improvement of the KNX standard that is keeping it at the forefront of smart building control globally.

[ver más...](#)

Smart quantum technologies for secure communication

Publicada en ScienceDaily, 16/03/2021.

Researchers have introduced a smart quantum technology for the spatial mode correction of single photons. The authors exploit the self-learning and self-evolving features of artificial neural networks to correct the distorted spatial profile of single photons.

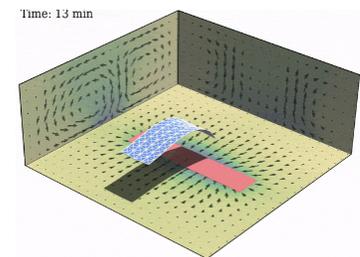


[ver más...](#)

'Swarmalation' used to design active materials for self-regulating soft robots

Publicada en ScienceDaily, 16/03/2021.

Engineers have designed a system of self-oscillating flexible materials that display a distinctive mode of dynamic self-organization. In addition to exhibiting the swarmalator behavior, the component materials mutually adapt their overall shapes as they interact in a fluid-filled chamber. These systems can pave the way for fabricating collaborative, self-regulating soft robotic systems.



[ver más...](#)

Bringing cities back smarter and more sustainably

Publicada en Shneider electric blog, 15/03/2021.

The climate timebomb is ticking. To meet the challenge, our cities must become carbon neutral by the end of the decade. The UK Government has put in place ambitious sustainability... [Read more »](#) The post Bringing cities back smarter and more sustainably appeared first on Schneider Electric Blog.



[ver más...](#)

How to boost hospital building safety and asset maintenance

Publicada en Shneider electric blog, 15/03/2021.

In recent blog articles, we've been exploring facets of hospital resilience as they relate to facility management systems and infrastructure. In our view, these aspects of resilience are the most... [Read more »](#) The post How to boost hospital building safety and asset maintenance appeared first on Schneider Electric Blog.



[ver más...](#)

Controlled by light alone, new smart materials twist, bend and move

Publicada en ScienceDaily_Solar Energy News, 12/03/2021.

Engineers created light-activated materials that execute precise movements and form complex shapes without the need for wires, motors or other energy sources. The research could lead to smart light-driven systems such as high-efficiency solar cells that automatically follow the sun's direction.



[ver más...](#)

Connected buildings: The first step towards the future of smart cities

Publicada en BW smartcities, 17/02/2021.

Smart Cities are set to gain further traction post the pandemic, with providers focusing on developing data-driven infrastructure to provide appropriate healthcare facilities and public security services.



[ver más...](#)

How Intelligent Traffic Management Systems Enable Smarter Use of Transport?

Publicada en BW smartcities, 13/02/2021.

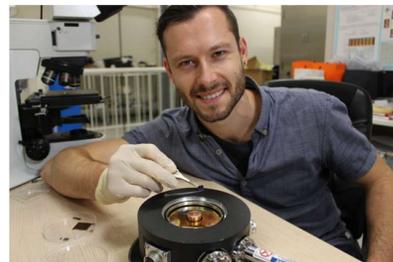
Our cities are busier than they have ever been - a record number of vehicles traveling to and from work, school, the gym, and wherever else commuters need to be on a daily basis. Using conventional traffic enforcement techniques can only go that far. One of the ways to solve this is to use cutting-edge technology that's as configurable, adaptable, is able to deliver solutions suited to match the emerging needs of traffic and civic authorities.

[ver más...](#)

Scientists create armour for fragile quantum technology

Publicada en Phys.org_Light emitting diode, 08/02/2021.

An international team of scientists has invented the equivalent of body armour for extremely fragile quantum systems, which will make them robust enough to be used as the basis for a new generation of low-energy electronics.



[ver más...](#)

New photonics research makes smaller, more efficient virtual and augmented reality tech possible

Publicada en Phys.org_Light emitting diode, 01/02/2021.

Researchers from North Carolina State University and the University of Texas have developed and demonstrated a new approach for designing photonic devices. The advance allows them to control the direction and polarization of light from thin-film LEDs, paving the way for a new generation of virtual reality (VR) and augmented reality (AR) technologies.

[ver más...](#)

EMPRESAS Y MERCADOS

Microsoft wins \$22 billion deal making headsets for US Army

Publicada en <https://www.independent.co.uk>, 31/03/2021.

Microsoft won a nearly \$22 billion contract to supply U.S. Army combat troops with its virtual reality headsets. Microsoft and the Army separately announced the deal Wednesday. The technology is based on Microsoft's HoloLens headsets, which were originally intended for the video game and entertainment industries.



[ver más...](#)

Scout: The Tiny AI-powered Autonomous Mobile Robot for home

Publicada en <https://www.kickstarter.com>, 19/03/2021.

Tiny in size but with huge intelligent power, Scout is the World's first AI-powered robot that can autonomously patrol your home 24/7. We are proud to introduce Scout, the world's first AI-powered autonomous home robot that lets you monitor, discover, and explore your world like never before. Scout is the ideal fun gadget for homeowners, pet lovers, programming learners, and robot passionists. And amazingly, it comes with a price tag that everyone can afford.



[ver más...](#)

Integration between Aperio wireless locks and AXIS Entry Manager software

Publicada en <https://www.ifsecglobal.com>, 10/03/2021.

AXIS Entry Manager access control software customers can now benefit from using Aperio battery-powered locks from ASSA ABLOY. Online integration has been established between the Axis A1001 Network Door Controller and Aperio devices. The two vendors explain the benefits to end-users.



[ver más...](#)

SmartSafe City Solutions Market to Soar Globally as Governments Increase Public Safety Measures: Frost and Sullivan Report

Publicada en BW smartcities, 11/02/2021.

The sector is expected to reach revenues of \$12.2 billion by 2030, finds Frost & Sullivan. SmartSafe City Solutions Market to Soar Globally as Governments Increase Public Safety Measures: Frost and Sullivan Report. Many cities around the world are planning for, purchasing, and bringing online their SmartSafe City programs and technology systems to integrate their public safety, health, city services, and citizen engagement capabilities to better serve and safeguard citizens. Frost & Sullivan's recent analysis finds that the SmartSafe City solutions sector is expected to reach a market value of \$12.2 billion by 2030, from \$10.6 billion in 2019

[ver más...](#)

Banks must sustain digital momentum in 2021

Publicada en <https://www.zdnet.com/>, 09/02/2021.

Recent Forrester research shows that a handful of leading banks are pushing ahead with their digital transformation, while many are still struggling to create and execute a coherent transformation strategy. As digital banking executives know all too well, shifting consumer behaviors is no small feat.

[ver más...](#)

Elon Musk is serious about crypto as Tesla puts \$1.5 billion in bitcoin

Publicada en https://finance.yahoo.com, 08/02/2021.

Anthony Pompliano, Partner, Morgan Creek Digital Assets and Dan Ives, Wedbush Securities Managing Director join the Yahoo Finance Live panel with the latest on Tesla announcing that it bought \$1.5 billion worth of bitcoin, according to a filing with the SEC.

[ver más...](#)

Cyber Intelligence Briefing: 5 February 2021

Publicada en https://insights.s-rminform.com, 05/02/2021.

The S-RM Cyber Intelligence Briefing is a weekly round-up of the latest cyber security news, trends and indicators, curated by our threat intelligence specialists.

[ver más...](#)

Ericsson on 2021: The year Industry 4.0 takes off – rocket-fuelled by private 5G

Publicada en <https://enterpriseiotinsights.com/>, 05/02/2021.

In 2021, increasing availability of 5G will provide the launching pad for manufacturing to truly evolve to Industry 4.0, the new industrial revolution that will push industries forward. Connected factories will move from isolated pilot programs and early test cases to truly integrated ecosystems, from the factory floor to the entire supply chain.

[ver más...](#)

PATENTES

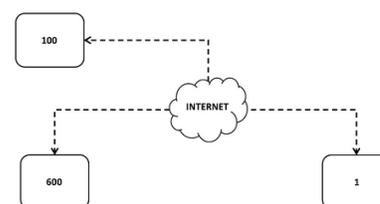
Computerised system to provide assistance to a person, in particular to a blind or visually impaired person

Publicada en Patentscope_Domótica, 24/03/2021.

Solicitante: PROTO, Alessandra [IT]

Computerized system (500) for providing assistance to a user characterized in that it includes at least one computerized device (1) comprising: - a support structure (2) shaped or arranged in such way as to be wearable by a user, said support structure being able to house or support one or more components of said computerized device; - a control unit (6) adapted to control the functioning of said computerized device, said control unit being at least partially housed in or fixed to said support structure

[ver más...](#)



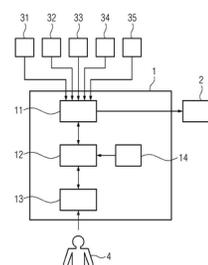
Method and device for generating a building automation project

Publicada en Patentscope_Domótica, 24/03/2021.

Solicitante: SIEMENS SCHWEIZ AG [CH]

The invention relates to a computer-implemented method for generating a building automation project of a building automation system, BAS, comprising the steps: receiving, via an interface, structural information regarding building equipment; generating a semantic model of the building automation system, comprising the step of automatically extracting equipment information from the structural information regarding the building equipment

[ver más...](#)





Smart mask and exposure device thereof, exposure method, and exposure pattern forming method

Publicada en Espacenet_Power Electronic, 18/03/2021.

Solicitante: MUSK ARRAY CO LTD[CN]

A smart mask (120) and an exposure device (100) thereof, an exposure method, and an exposure pattern forming method. The smart mask (120) comprises a bottom plate (121), a plurality of first micro light-emitting diode assemblies (122) and a protective layer. The plurality of first micro light-emitting diode assemblies (122) are arranged in an array on a base plate (121) of the same size as a traditional mask, so as to determine the light emission state on the basis of control signals received from lines on the base plate (121), thereby defining an exposure pattern.

[ver más...](#)

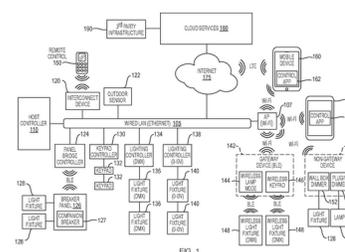
Circadian lighting in a diverse home automation system

Publicada en Patentscope_Domótica, 17/03/2021.

Solicitante: SAVANT SYSTEMS, INC. [US]

In various embodiments, an architecture is provided for implementing circadian lighting in a home automation system having diverse lighting devices of different capabilities and manners of control. The architecture utilizes an outdoor sensor to capture current intensity and color temperature data for the outdoor environment. Color temperatures and intensities from a user-created circadian lighting curve are dynamically adjusted based on the current intensity and color temperature data for the outdoor environment to approximate changes that are occurring.

[ver más...](#)



Smart window with integral cleaning system

Publicada en Patentscope_Domótica, 17/03/2021.

Solicitante: OLKHOVSKII, Vitalii Konstantinovich [RU]

The utility model relates to building-finishing elements, in particular to windows which contain an automatic system for cleaning the surface of a pane. The claimed utility model is directed towards increasing the efficiency of window pane cleaning. A window with an integral cleaning system comprises a frame formed from vertical and horizontal profiles, a pane and a wiper blade.

[ver más...](#)

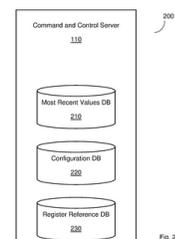
System and method for assuring building air quality

Publicada en Patentscope_Domótica, 17/03/2021.

Solicitante: INTEGRATED ENERGY SERVICES CORPORATION [US]

A system and method for centrally assuring building air quality are provided. The method includes collecting, from a set of sensors of a plurality of sensors, at least air quality data, wherein the plurality of sensors are installed in different locations within a building; analyzing the collected air quality data to determine an air-quality level across different locations within the building; determining whether an adjustment to at least one control device is required, wherein the determination is based on the determined air-quality level and at least one energy-consumption parameter

[ver más...](#)

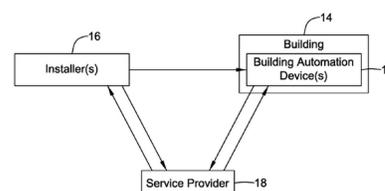


Systems and methods of verifying installation of building automation devices

Publicada en Patentscope_Domótica, 17/03/2021.

Solicitante: Honeywell International Inc.

Methods and systems may be configured to verify proper installation of Internet Protocol (IP) connectable building automation devices by installers at remote sites. The installers may be a crowdsourced installers. A service provider may engage an installer to install one or more IP connectable building automation devices. To ensure verification that the one or more IP connectable building automation devices are installed properly, parameters or values based on data from installed IP connectable building automation devices may be provided to or determined by a blockchain network.



[ver más...](#)

Photovoltaic solar collection system and natural illumination apparatus for building integration

Publicada en Espacenet_Patentes sobre energía solar fotovoltaica, 11/03/2021.

Solicitante: MORGAN SOLAR INC[CA]

An optical collection apparatus includes a plurality of light transmissive optical reflectors and a plurality of planar bifacial solar cells. Each light transmissive optical reflector is configured to transmit indirect light impinging on first and second collection sides thereof. First and second photovoltaic sides of each of the plurality of bifacial solar cells are positioned to collect indirect light impinging thereon.

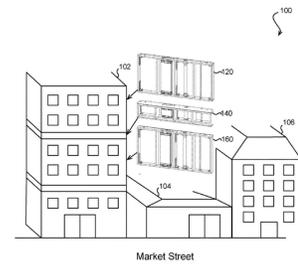
[ver más...](#)

Closed panel building systems

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: Peter Mueller

Approaches describe a panel system (e.g., a closed-, open-, and/or solid-panel system) that can be assembled quickly and easily in the field without field modifications to the panel. The panels can be precision engineered, and include a building connection system for structural and/or utility connection between building elements.



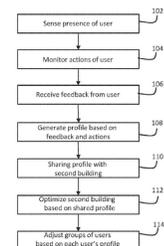
[ver más...](#)

Detecting abnormal behavior in smart buildings

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: Carrier Corporation

A method and system for detecting anomalous behavior in a smart building is disclosed. A method includes detecting a presence of a user at the smart building; retrieving a profile of the user; monitoring actions of the user in the smart building with respect to each of a plurality of aspects



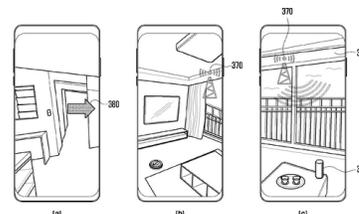
[ver más...](#)

In-home relay device and electronic device connected thereto

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: SAMSUNG ELECTRONICS CO., LTD. [KR]

An in-home relay device according to various embodiments disclosed in the present document may comprise: a housing; an antenna provided in the housing; an antenna alignment unit for changing the position of the antenna so as to change the radiation direction of the antenna



[ver más...](#)

Occupant monitoring method and system for building energy management

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: UNIVERSITY OF MARYLAND, COLLEGE PARK

Systems, methods, apparatuses, and computer program products for managing building energy utilization are provided. One method may include collecting physiological data signals of an occupant in a building. The method may also include calculating, based on the physiological data signals, heart rate variability of the occupant.



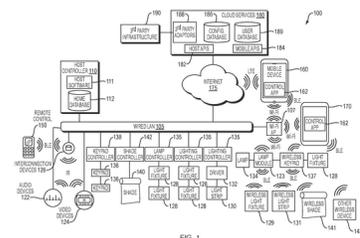
[ver más...](#)

Redundant control for wireless devices in a home automation system

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitantes: SAVANT SYSTEMS [US]

In one embodiment, an architecture for redundant control of wireless devices (e.g., wireless light fixtures, wireless light strips, wireless window shades, or other wireless devices) of a home automation system is provided that uses a combination of WLAN and WPAN communication. During normal operation of the home automation system, control commands generated in response to user input in a control application (app) on a control device (e.g., a remote control, mobile device, or other electronic device) are transmitted via a WLAN (e.g., Wi-Fi) to a bridge device (e.g., a lamp module or wireless keypad) proximate to the wireless device, which forwards the commands over a WPAN (e.g., BLE) to the wireless device.



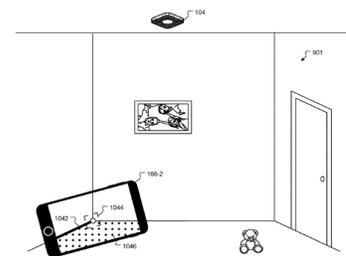
[ver más...](#)

Smart-home device placement and installation using augmented-reality visualizations

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: Google LLC [US]

A method for guiding installation of smart-home devices may include capturing, by a camera of a mobile computing device, a view of an installation location for a smart-home device; identifying a wire in the view of the installation location for the smart-home device; determining an instruction for connecting the wire to the smart-home device; and displaying the view of the installation location for a smart-home device with the instruction for connecting the wire to the smart-home device.



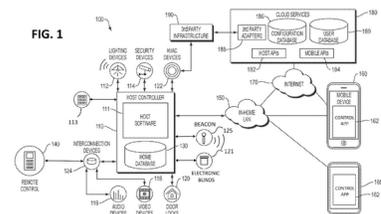
[ver más...](#)

Three dimensional virtual room-based user interface for a home automation system

Publicada en Patentscope_Domótica, 10/03/2021.

Solicitante: SAVANT SYSTEMS [US]

In one embodiment, a user-navigable, three-dimensional (3-D) virtual room-based user interface for a home automation system is provided. Each user-navigable 3-D virtual room shows a substantially photo-realistic depiction of a corresponding physical room of the structure, including substantially photo-realistic depictions of boundaries of the physical room, furnishings present in the physical room, and devices present in the physical room that are under the control of the home automation system



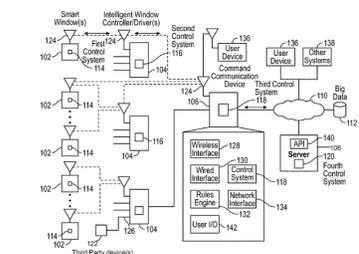
[ver más...](#)

Building model generation and intelligent light control for smart windows

Publicada en Patentscope_Domótica, 08/03/2021.

Solicitante: Kinestral Technologies, Inc.

A smart window system is provided. The system includes a plurality of smart windows, each having at least one electrochromic window and a plurality of sensors. The system includes a control system coupling the plurality of smart windows and the plurality of sensors. The control system is configured to couple to a network, and configured to generate a building model that includes information regarding the plurality of smart windows and is based on information from the plurality of sensors and information from the network.



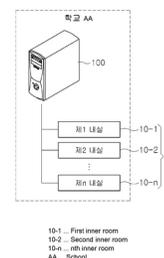
[ver más...](#)

Building energy management system

Publicada en Patentscope_Domótica, 03/03/2021.

Solicitante: NINEWATT CO., LTD. [KR]

The present invention relates to a building energy management system. The building energy management system according to one embodiment of the present invention comprises: a collection module for receiving weather information provided from an external organization, atmospheric information about at least air quality from a plurality of external sensors provided in the outside space of a building, and building information about each living room inside the building from a plurality of internal sensors provided in the internal space of the building



[ver más...](#)

Method and apparatus for controlling smart home device

Publicada en Patentscope_Domótica, 03/03/2021.

Solicitante: GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI [CN]

Disclosed are a method and apparatus for controlling a smart home device. Aimed at solving the problem of server resource consumption caused due to a server continuously forwarding control instructions to a smart home device in the prior art, the method comprises: a server receiving a first instruction sent by a terminal, wherein the first instruction carries identification information of the smart home device; according to the identification information, acquiring the current working state information of the smart home device

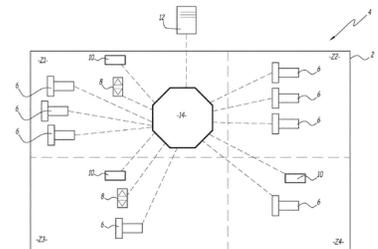
[ver más...](#)

Method of automatic configuration of network address of a communicating element forming part of a home-automation system, associated network interface, communicating element and home-automation system

Publicada en Patentscope_Domótica, 03/03/2021.

Solicitante: SOMFY ACTIVITES SA

Disclosed is a method for automatically configuring a network address of network interfaces of communicating elements intended to form part of a home-automation system for a building and belonging to an unconfigured network part, the unconfigured network part including a head network equipment item and at least one communicating element, the network address of each network interface including a network prefix.



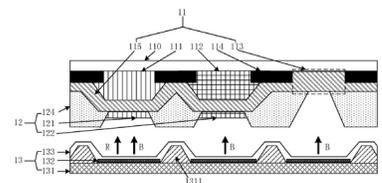
[ver más...](#)

Quantum dot organic light emitting diode display panel

Publicada en Patentscope_LED, 03/03/2021.

Solicitante: SHENZHEN CHINA STAR OPTOELECTRONICS SEMICONDUCTOR DISPLAY TECHNOLOGY CO., LTD.

A quantum dot organic light emitting diode (OLED) display panel is disclosed. A red-and-blue mixture light source is used as an OLED light source corresponding to a red sub-color-resist of a color filter, and/or a green-and-blue mixture light source is used as the OLED light source corresponding to a green sub-color-resist of the color filter.



[ver más...](#)

Smart loss-proof luggage case and alarm method

Publicada en Patentscope_LED, 03/03/2021.

Solicitante: UNIVERSITY OF SCIENCE AND TECHNOLOGY BEIJING [CN]

A smart loss-proof luggage case and an alarm method. The smart loss-proof luggage case comprises a case body, a pull rod and dragging wheels, and the smart loss-proof luggage case is provided with a smart alarm system, which comprises a CPU module that is built into the case. The CPU module is connected to a power source management module, a position acquisition module, a data communication module, a voice input module, a voice broadcasting module, a Bluetooth module, a photosensitive switch, a built-in camera, an exterior camera, a vibration/impact sensor, a tri-axial acceleration sensor, a fingerprint sensor, a dragging wheel photoelectric encoder and an LED alarm prompt module.

[ver más...](#)

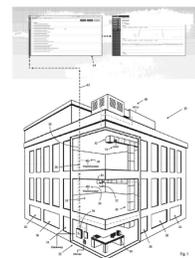
System and method for configuring analytic rules to equipment based upon building data

Publicada en Patentscope_Domótica, 03/03/2021.

Solicitante: RESOLUTE BUILDING INTELLIGENCE, LLC [US]

An energy management system is disclosed for optimizing energy usage of HVAC equipment in a building complex. The energy management system is configured to be integrated into an existing Building Automation System ("BAS system") in order to process the data points in a less time consuming and efficient manner relative to known systems that map one point at a time. The BAS system data points are "point mapped", i.e., uploaded to a file in the "cloud", and are updated continuously as a function of time and deposited in a "bucket" in which the data points are unfiltered.

[ver más...](#)

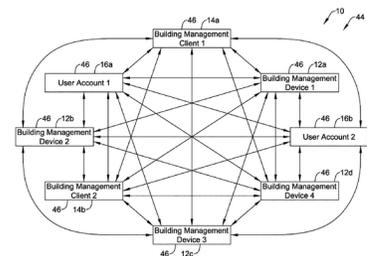


Systems and methods of using a blockchain to secure a building management system

Publicada en Patentscope_Domótica, 03/03/2021.

Solicitante: Honeywell International Inc.

A building management system having one or more layers of security. The building management system may include building management devices and building management clients configured to be used to access the one or more building management devices. The building management devices and the building management clients may be in communication with one another to form a blockchain network.



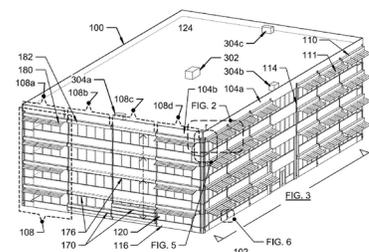
[ver más...](#)

System for guidance and deployment of active panels on building walls

Publicada en Patentscope_Domótica, 01/03/2021.

Solicitante: Thomas E. Carleton

A system for guidance and deployment of active panels on a building. One or more guide rails are coupled to a building wall. Panel units are coupled to the guide rails. An active panel can extend and contract from each panel unit. A control system conveys the panel units to an operational position on the building wall. When a panel unit is in operational position, The control system extends or retracts the respective active panel from the panel unit, and adjusts the angle of the panel unit relative to the building wall.



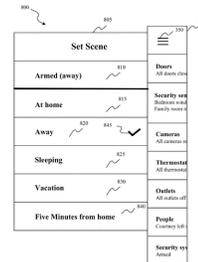
[ver más...](#)

Systems and methods for home automation scene control

Publicada en Patentscope_Domótica, 01/03/2021.

Solicitante: Vivint, Inc.

Methods and systems are described for providing a graphical user interface suitable for viewing and modifying home automation, home security, and/or energy management devices. In some embodiments, the graphical user interface may include a scene selection list displaying multiple selectable items representing various scenes.

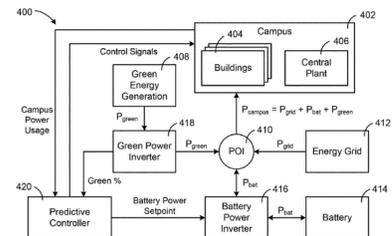


[ver más...](#)

Building control system with constraint generation using artificial intelligence model

Publicada en Patentscope_Domótica, 24/02/2021.

A building control system includes one or more processors and one or more non-transitory computer-readable media storing instructions. When executed by the one or more processors, the instructions cause the one or more processors to perform operations including using an artificial intelligence model to adjust a threshold value of a constraint based on user input provided via one or more user devices during a first time period.



[ver más...](#)

Display device and artificial intelligence server capable of controlling home appliance through user's voice

Publicada en Patentscope_Domótica, 24/02/2021.

Solicitante: LG ELECTRONICS INC.

A display device for controlling a home appliance by using a voice recognition, according to an embodiment of the present invention, may comprise: a display unit; a wireless communication unit for wirelessly performing communication with the home appliance; and a control unit which receives a voice command, when the intention of the received voice command is the intention for requesting a method for handling an object, on the basis of information of the object, determines an operation mode of the home appliance for handling the object, and, in the determined operation mode, transmits, to the home appliance, a control command for operating the home appliance.

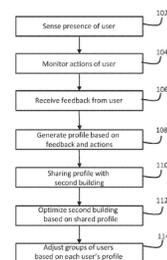
[ver más...](#)

User Profiles for Optimized Smart Buildings

Publicada en Patentscope_Domótica, 24/02/2021.

Solicitante: Carrier Corporation

A method and system for creating and maintaining a profile for a smart building comprising is disclosed. A method includes detecting a presence of a user at the smart building; monitoring actions of the user in the smart building with respect to each of a plurality of aspects; receiving feedback from the user via a human machine interface from the user regarding one or more of the plurality of aspects



[ver más...](#)

Real time monitoring of face recognition based home automation system for energy conservation

Publicada en Patentscope_Domótica, 18/02/2021.

Solicitante: M.KARTHIKEYAN

Real Time monitoring of Face Recognition based home automation system for Energy conservation system. The present invention is real time monitoring of face recognition based home automation system to enhance security at home/office and to use the electrical appliances by capturing the face. The authenticated faces/users LBPH (Local Binary Pattern Histogram) (115) features were extracted and modelled using SVM to construct the face profile of all authenticated users.

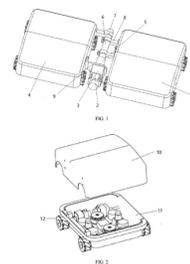
[ver más...](#)

Three-dimensional space wall-climbing polishing robot and polishing efficiency control method

Publicada en Patentscope_Domótica, 16/02/2021.

Solicitante: 28TH RES INST CHINA ELECTRONICS TECH GROUP CORP

A three-dimensional space wall-climbing polishing robot is composed of two independent wall-climbing polishing robots 1, 2 connected by a turnover mechanism, the two robots having polishing mechanisms 17 and the turnover mechanism comprises a stepping motor 2 connected with a sector gear reducer 3 connected via a coupler 5 with a pitching rotating shaft 6 having a sliding bearing 7, a connecting hoop 8 and a first fixed corner 9 by which the second robot 4 is fixed to the gear reducer 3.



[ver más...](#)

Home automation system

Publicada en Patentscope_Domótica, 11/02/2021.

Solicitante: KAHA PTE. LTD. [IN]

The present invention provides a home automation system and a method of operating thereof. The method includes the steps of: detecting presence of one or more smart devices paired to a home automation module; receiving a request to control said home automation system from one or more of detected smart devices

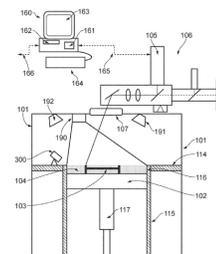
[ver más...](#)

Additive manufacturing apparatus and method

Publicada en Patentscope_Domótica, 10/02/2021.

Solicitante: RENISHAW PLC

This invention concerns a laser solidification apparatus for building objects by layerwise solidification of powder material. The apparatus including a build chamber containing a build platform, a device for depositing layers of powder material on to the build platform, an optical unit for directing a laser beam to selectively solidify areas of each powder layer and a spectrometer for detecting characteristic radiation emitted by plasma formed during solidification of the powder by the laser beam.



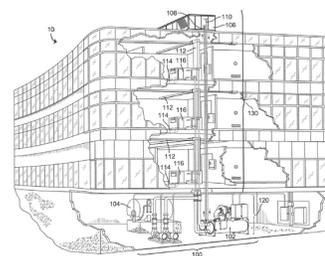
[ver más...](#)

Building HVAC system with modular cascaded model

Publicada en Patentscope_Domótica, 10/02/2021.

Solicitante: Johnson Controls Technology Company

A controller for HVAC equipment stores a cascaded model that includes a disturbance model configured to predict a heat disturbance affecting the building zone as a function of one or more exogenous parameters and a physics model configured to predict a temperature of the building zone as a function of the heat disturbance and an amount of heating or cooling provided to the building zone by HVAC equipment.



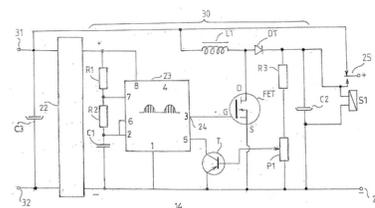
[ver más...](#)

Device for coupling a solar panel to an inverter and a system formed thereby

Publicada en Patentscope_Domótica, 10/02/2021.

Solicitante: JÜLLICH TECHNOLOGY INNOVÁCIÓS KFT. [HU]

Device (14) for coupling a solar panel or panels (10, 11 or 12) to an inverter, wherein the device has input ports (31, 32) connected to the two outputs of the associated solar panel or panels, and has two output ports (25, 26) delivering an increased DC voltage compared to the voltage coupled to said input ports (31, 32).



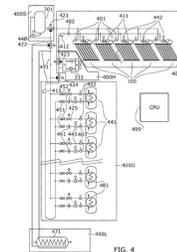
[ver más...](#)

Integrated heat management for a building

Publicada en Patentscope_Domótica, 10/02/2021.

Solicitante: SOWILLO ENERGY LTD [IL]

An aspect of some embodiments of the current invention relates to an integrated system for heat distribution among a plurality of users. In some embodiments, the system includes a separate automatic control of heat distribution to each user and/or separate billing to each user. For example, a system may supply hot fluid to a plurality of apartments in a building and/or in multiple buildings.



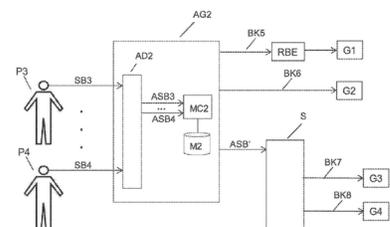
[ver más...](#)

Method and System for Providing A Speech-Based Service, in Particular for the Control of Room Control Elements in Buildings

Publicada en Patentscope_Domótica, 10/02/2021.

Solicitante: Siemens Schweiz AG

Various embodiments of the teachings herein include methods and systems for providing a speech-based service for the control of room control elements in buildings. Speech instructions are received by means of an audio device. The audio device is configured to analyze the received speech instructions, to convert them into corresponding operating commands for room control elements for the control of, in particular, HVAC devices (e.g. field devices) in a building and to pass them on to the corresponding room control elements.



[ver más...](#)

PUBLICACIONES CIENTÍFICAS

A Framework for Energy-Efficiency in Smart Home Environments

Publicada en Tecnologías Inteligentes, 30/03/2021.

Part 7: Cyber-Physical Systems ; International audience ; A resource-efficient Europe is a pillar of the EU 2020 program which aims at smart, sustainable, inclusive growth. The diffusion of smart networked environments, wherein humans, intelligent agents and devices collaborate, is fundamental for achieving energy-efficiency in buildings. In this context, this paper deals with the topic of Smart Home Environments (SHEs), where users can exploit multimedia services to interact with heterogeneous [...]



[ver más...](#)

Privacy-Enabled Smart Home Framework with Voice Assistant

Publicada en Tecnologías Inteligentes, 28/03/2021.

International audience ; Smart home environment plays a prominent role in improving the quality of life of the residents by enabling home automation, health care and safety through various Internet of Things (IoT) devices. However, a large amount of data generated by sensors in a smart home environment heighten security and privacy concerns among potential users. Some of the data can be sensitive as it contains information about users' private activities, location, behavioural patterns and health[...]

[ver más...](#)

Older Adults' Perspectives of Smart Home Technology: Are We Developing the Technology That Older People Want?

Publicada en Tecnologías Inteligentes, 04/03/2021.

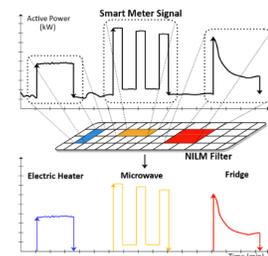
New technology and smart homes have the potential to improve quality of life, safety, and care for older people. However, we do not yet know how older people's perceptions of these technologies may vary, in particular how views based on experience of actual use may differ from those related to anticipated use. We also do not know how older people living independently might view technology that may be of future rather than current value to them. This paper explores older people's views of smart h[...]

[ver más...](#)

Smart-Building Applications:: Deep Learning-Based, Real-Time Load Monitoring

Publicada en Tecnologías Inteligentes, 03/03/2021.

Google's Director of Research, Peter Norvig said that “We don't have better algorithms than anyone else, we just have more data”. This inspiring statement shows that having more data is directly related to better decision making and having the foresight about the future. With the development of the Internet of Things (IoT) technology, it is now much easier to gather data. Technological tools such as social media websites, smartphones, and security cameras can be considered as “data generators”. When the focus is shifted to the energy field, these generators are “Smart Meters”.



[ver más...](#)

Internet of Things for enabling smart environments: a technology-centric perspective

Publicada en Tecnologías Inteligentes, 26/02/2021.

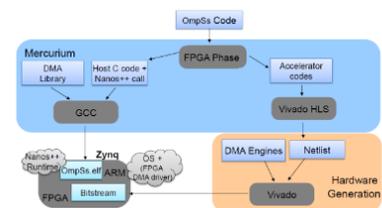
The Internet of Things (IoT) is a computing paradigm whereby everyday life objects are augmented with computational and wireless communication capabilities, typically through the incorporation of resource-constrained devices including sensors and actuators, which enable their connection to the Internet. The IoT is seen as the key ingredient for the development of smart environments. Nevertheless, the current IoT ecosystem offers many alternative communication solutions with diverse performance c[...]

[ver más...](#)

The AXIOM project: IoT on heterogeneous embedded platforms

Publicada en Tecnologías Inteligentes, 26/02/2021.

© 2019 IEEE. Personal use of this material is permitted. Permission from IEEE must be obtained for all other uses, in any current or future media, including reprinting/republishing this material for advertising or promotional purposes, creating new collective works, for resale or redistribution to servers or lists, or reuse of any copyrighted component of this work in other works. ; The AXIOM project aims at providing an environment for Cyber-Physical Systems. Smart Video Surveillance targets pub[...]



[ver más...](#)

Stochastic interval-based optimal offering model for residential energy management systems by household owners

Publicada en Tecnologías Inteligentes, 25/02/2021.

This paper proposes an optimal bidding strategy for autonomous residential energy management systems. This strategy enables the system to manage its domestic energy production and consumption autonomously, and trade energy with the local market through a novel hybrid interval-stochastic optimization method. This work poses a residential energy management problem which consists of two stages: day-ahead and real-time. The uncertainty in electricity price and PV power generation is modeled by inter[...]

[ver más...](#)

Bringing 5G Into User's Smart Home

Publicada en Tecnologías Inteligentes, 23/02/2021.

A successful 5G Smart Home must be able to support 5G devices along with WLAN devices. This is not possible with the 5G specifications, and to remedy the situation, this paper proposes a 5G Smart Home Solution that combines the 5G network slice concept with a femtocell home router, supporting both 5G and WLAN access technologies. While making use of standard technologies, the solution has proven to be efficient and reliable. For that purpose, in this paper we propose a femtocell network slice ar[...]

[ver más...](#)

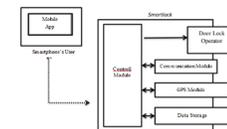
Automation Smartlock for Implementing Smarthome Security Using Location Based Service

Publicada en Tecnologías Inteligentes, 23/02/2021.

Currently, the development of technology is very rapid. Technology is used to assist humans in carrying out daily activities. One of the advances in technology is the development of tools that can control over long distances or remotely (the Internet of Things). IoT applications are for remote monitoring and smart home appliance controlling. We propose a mobile-based door security model. At present, there are many door security models, but in this study, we propose security at doors using Location [...]



Figure 1 The proposed of the smart door lock system architecture



[ver más...](#)

Smart home power management system for electric vehicle battery charger and electrical appliance control

Publicada en Tecnologías Inteligentes, 18/02/2021.

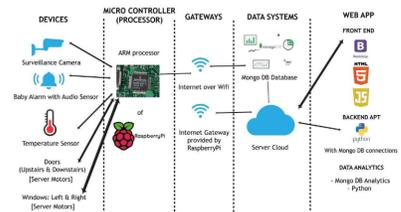
This paper presents a power management system (PMS) designed for smart homes aiming to deal with the new challenges imposed by the proliferation of plug-in electric vehicles (EVs) and their coexistence with other residential electrical appliances. The PMS is based on a hybrid wireless network architecture composed by a local hub/gateway and several Bluetooth Low Energy (BLE) and Wi-Fi sensor/actuator devices. These wireless devices are used to transfer information inside the smart home using the [...]

[ver más...](#)

Privacy-by-design for Internet of Things (IoT): Implementing user autonomous options in a smart home scenario

Publicada en Tecnologías Inteligentes, 18/02/2021.

Capstone Project submitted to the Department of Engineering, Ashesi University in partial fulfillment of the requirements for the award of Bachelor of Science degree in Electrical and Electronic Engineering, May 2020 ; In traditional Internet of Things (IoT) systems, users are unable to authorize and/or deauthorize the collection of user data. Hence, the problem of the absence of user autonomy in IoT systems. The project aims to tackle this problem by suggesting a human-centered privacy-by-design[...]



[ver más...](#)

Key determinants for the slow pace of smart home adoption : a study of digital consumer insights

Publicada en Tecnologías Inteligentes, 16/02/2021.

The smart home concept has been on the market for several years now. Its intelligent technology promises to improve living quality by enriching the consumer's daily life with more convenience and time. Yet, it has failed to establish in the homes of mass-market consumers. Existing academic research already spend time examining the concept and its barriers. Nevertheless, empirical evidence about insights from a consumer perspective is still scarce, even though it is considered to be crucial infor[...]



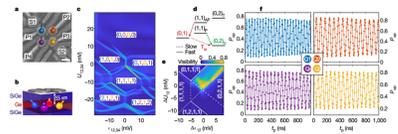
[ver más...](#)

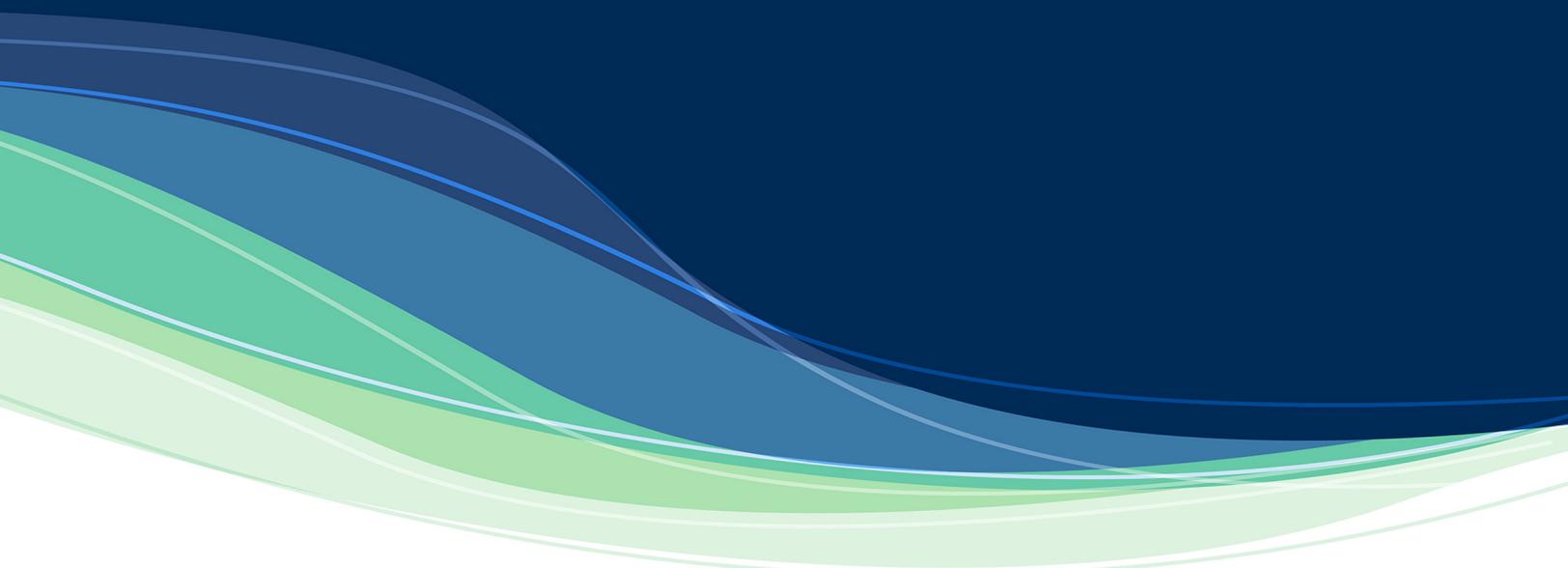
A four-qubit germanium quantum processor

Publicada en <https://www.nature.com>, 04/02/2021.

The prospect of building quantum circuits^{1,2} using advanced semiconductor manufacturing makes quantum dots an attractive platform for quantum information processing^{3,4}. Extensive studies of various materials have led to demonstrations of two-qubit logic in gallium arsenide⁵, silicon^{6–12} and germanium¹³. However, interconnecting larger numbers of qubits in semiconductor devices has remained a challenge.

[ver más...](#)





Generado con Tecnología VIGIALE©, IALE Tecnología.