



Trends in Health Care Technology and the Role Patents Play

May 21st, 2021



Digital Health / Health Care Technology

- Digital health – a broad umbrella term encompassing **e-health**, as well as developing areas such as the use of **advanced computer sciences** (for example, in the fields of “**big data**”, **genomics and artificial intelligence**) – plays an important role in strengthening health systems and public health, increasing equity in access to health services, and in working towards universal health coverage

<https://www.euro.who.int/en/health-topics/Health-systems/digital-health>

- The use and increase of digital health solutions can revolutionize how people worldwide achieve higher standards of health, and access services to promote and protect their health and well-being.
- Digital health provides opportunities to accelerate our progress in attaining health and well-being related Sustainable Development Goal (SDGs), especially SDG 3.

https://www.who.int/health-topics/digital-health#tab=tab_1

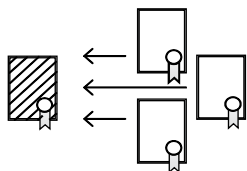


Patent Analytics in LexisNexis® PatentSight® : Quality Assessment

Technology Relevance™

Worldwide citations received from later patents, adjusted for age, patent office practices and technology field

Average value: 1



Competitive Impact™

(Individual patent strength)
The relative business value of a patent family

X

Σ

Patent Asset Index™



Innovative strength of a company or portfolio (ability to achieve competitive advantage)!

Market Coverage™

Market size protected by active patents and pending patent applications on a certain invention

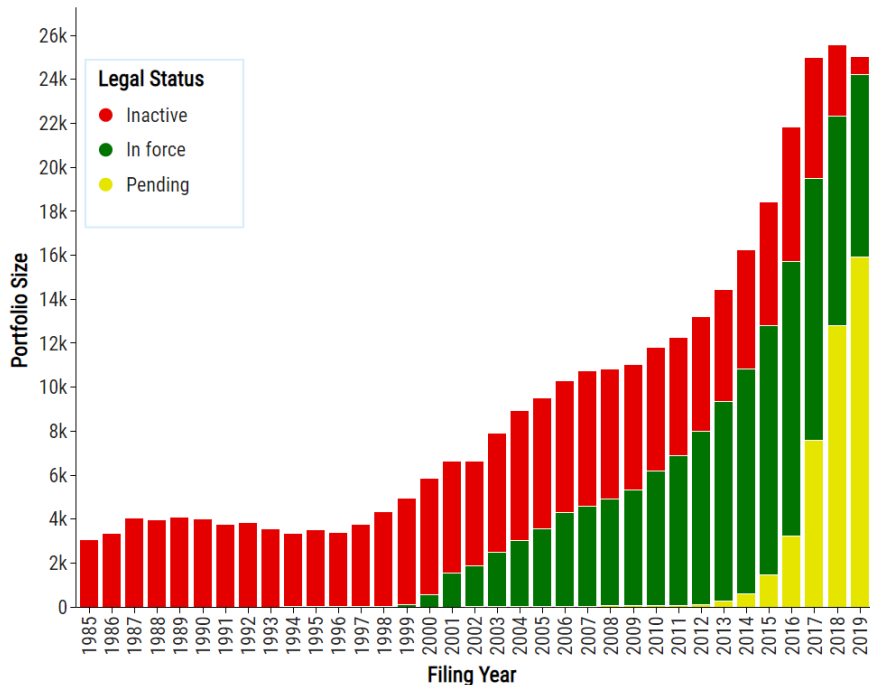
Value of granted US patent: 1



Individual Patent Family

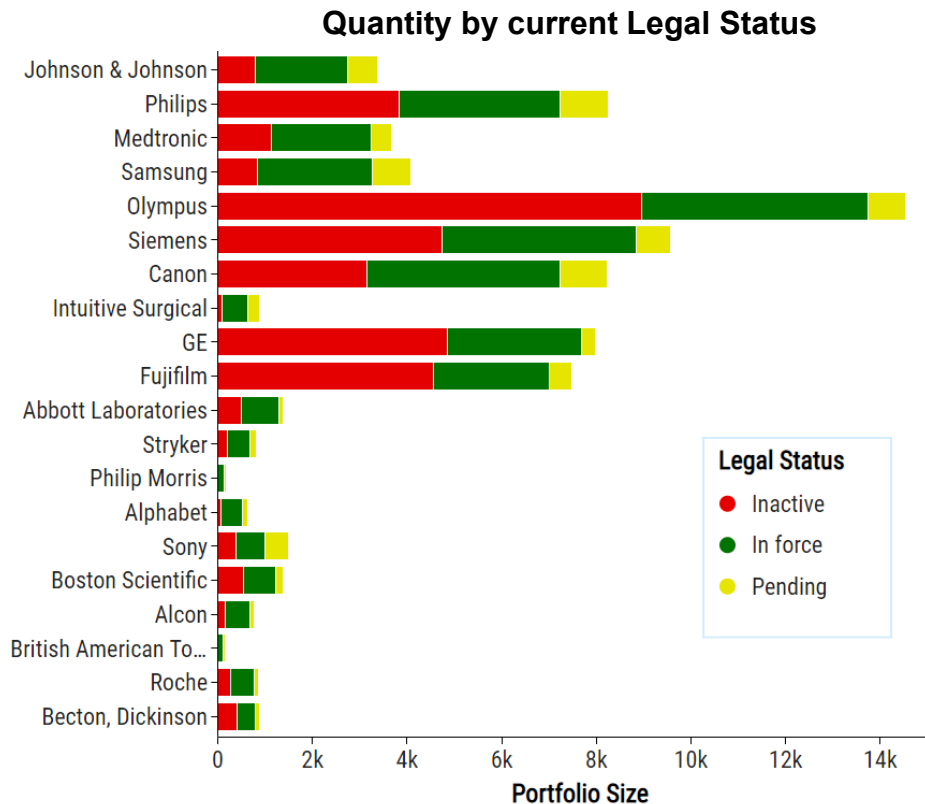
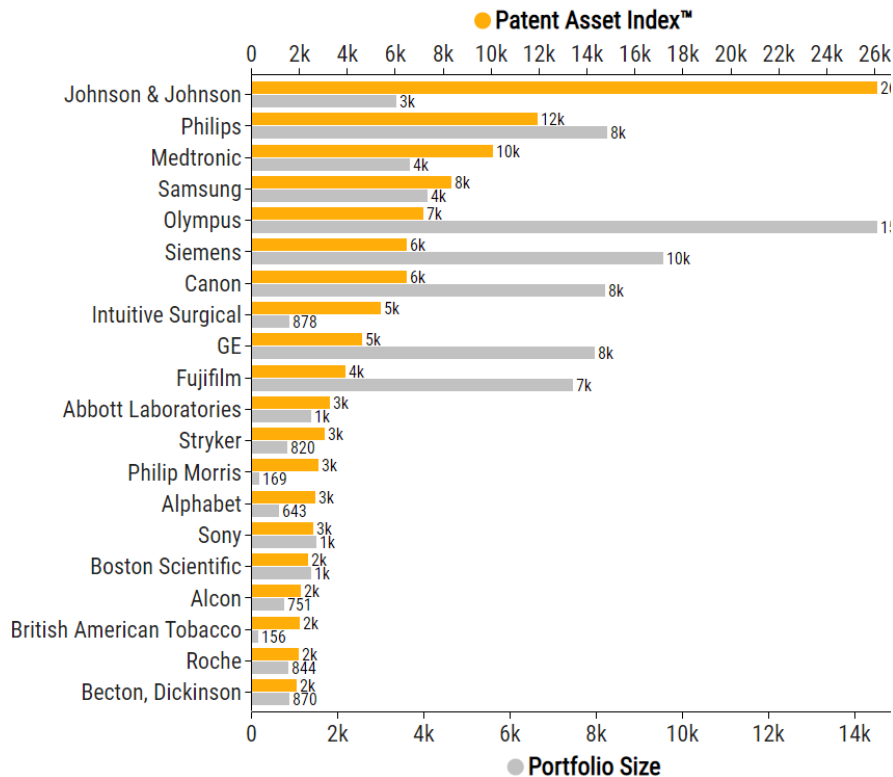
Overview of the Field

Filing Statistics with Current Legal Status

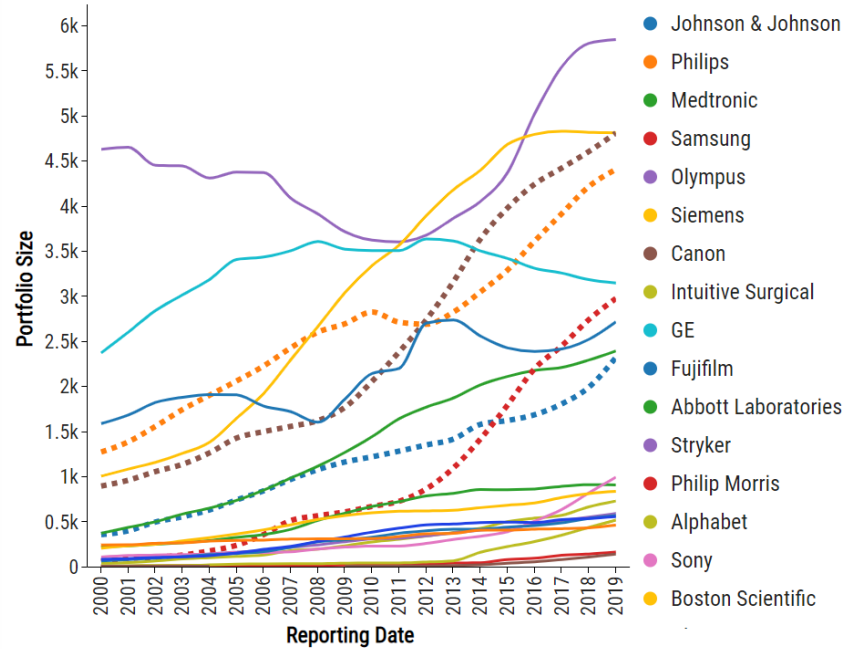
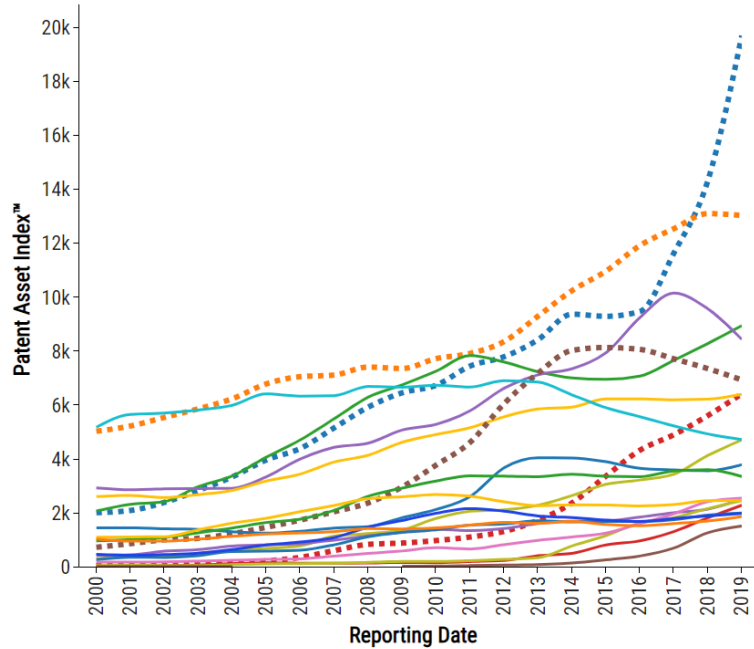


- The number of filings has been increasing in recent years.
- Even recently filed patent families have gone inactive at the current date. The science and the inventions are probably developing in the 'heuristic' (tried and tested) way.

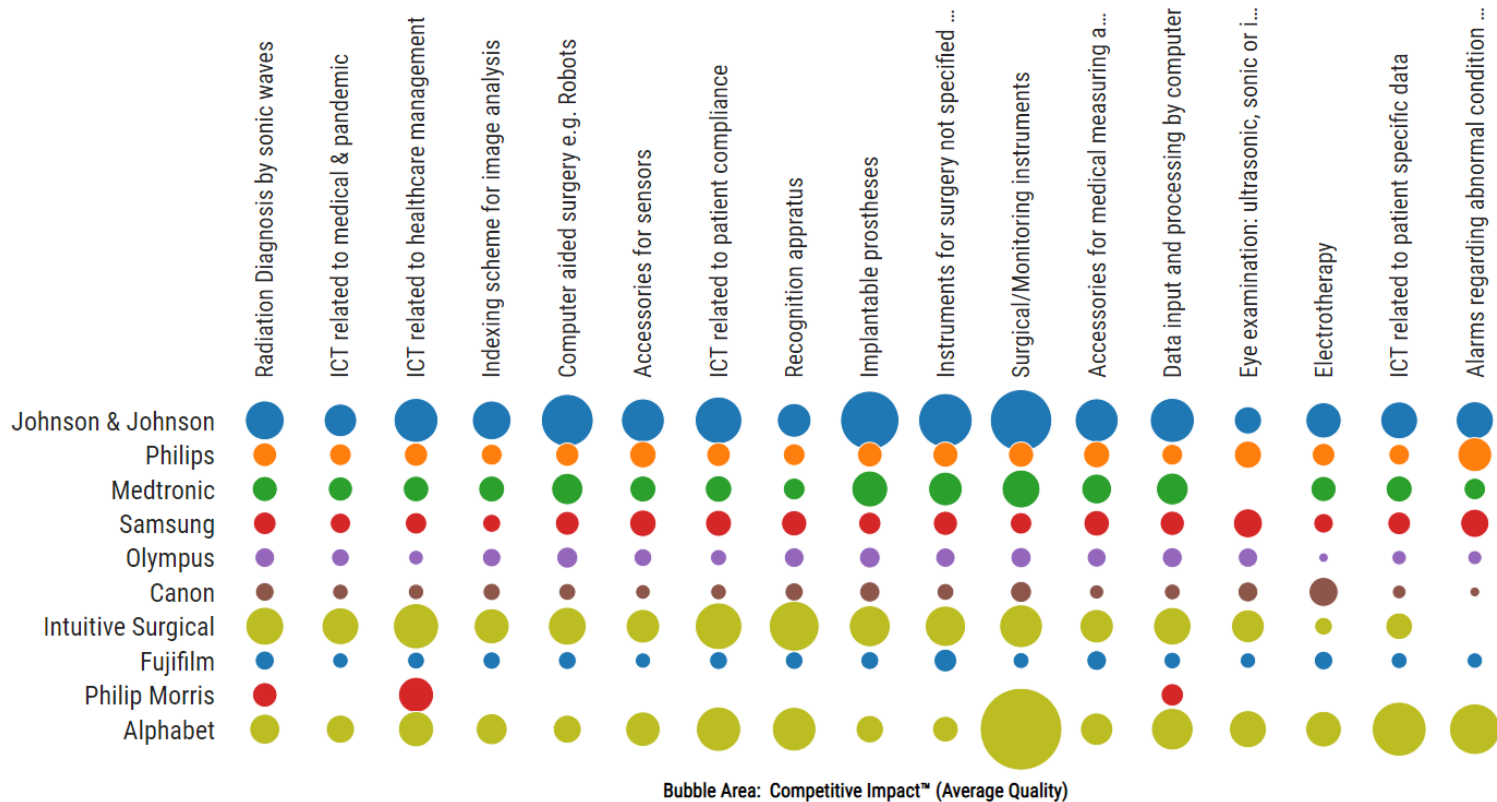
Top 20 Entities as per Portfolio Strength



Time evolution of Patent Asset Index™ and Portfolio Size (active)



Comparative analyses of strength of selected companies in different areas



NEWS

Johnson & Johnson's new robotic surgical system to rival Intuitive Surgical's da Vinci

By GlobalData Healthcare | 01 Dec 2020 (Last Updated December 1st, 2020 09:55)

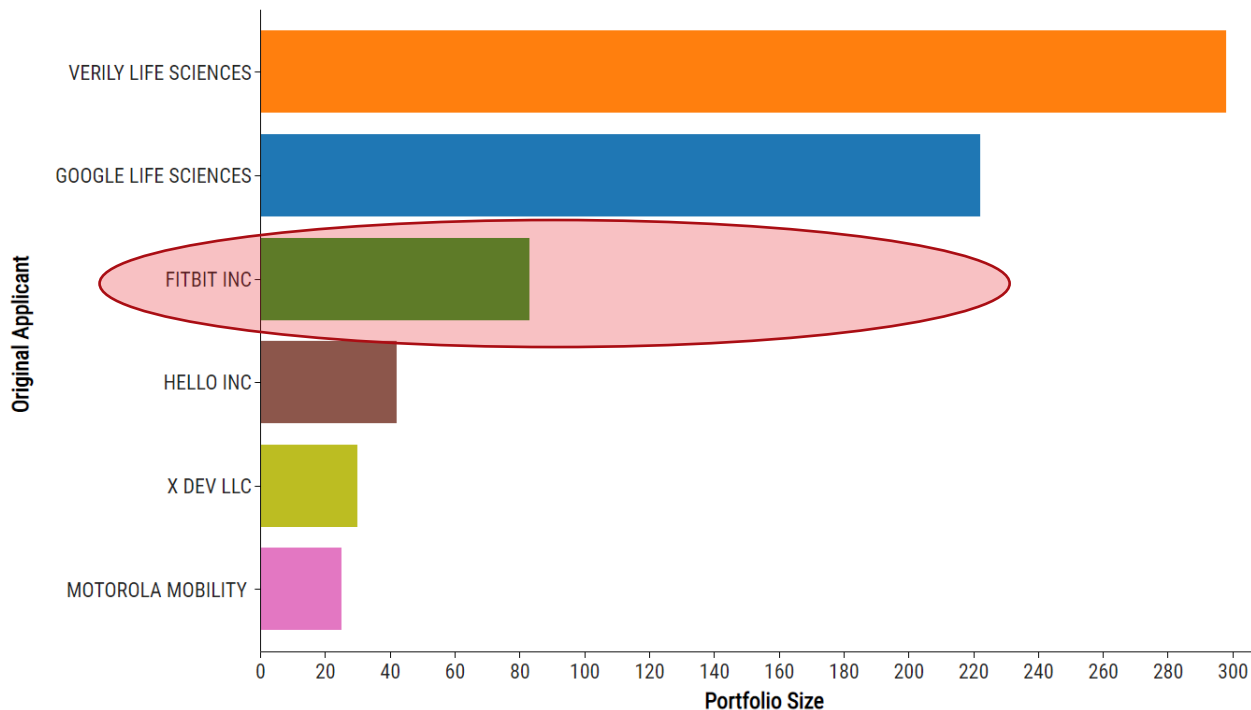
Johnson & Johnson have announced details for its new robotic surgical system, Ottava, that will compete with Intuitive Surgical's da Vinci robot.

In 2000, da Vinci became the first FDA-approved robotic surgical system for general laparoscopic surgery. Since that time, Intuitive Surgical has dominated the market for robotic surgery, with many general surgery procedures, such as colectomies, cholecystectomies, hernia repair, hysterectomies, myomectomies, and prostatectomies, performed using the da Vinci system.

<https://www.medicaldevice-network.com/features/ottava-robotic-johnson/>

Alphabet in the field of Health Care Technology/Digital Health

Original Applicants of patents owned by Alphabet in the field



- Acquired patent families are higher in number than Original patent families filed by Alphabet in this field.
- LexisNexis PatentSight works with Ultimate Owner concept.



MARKETS

BUSINESS

INVESTING

TECH

POLITICS

CNBC TV

WATCHLIST

PRO

Google closes its Fitbit acquisition

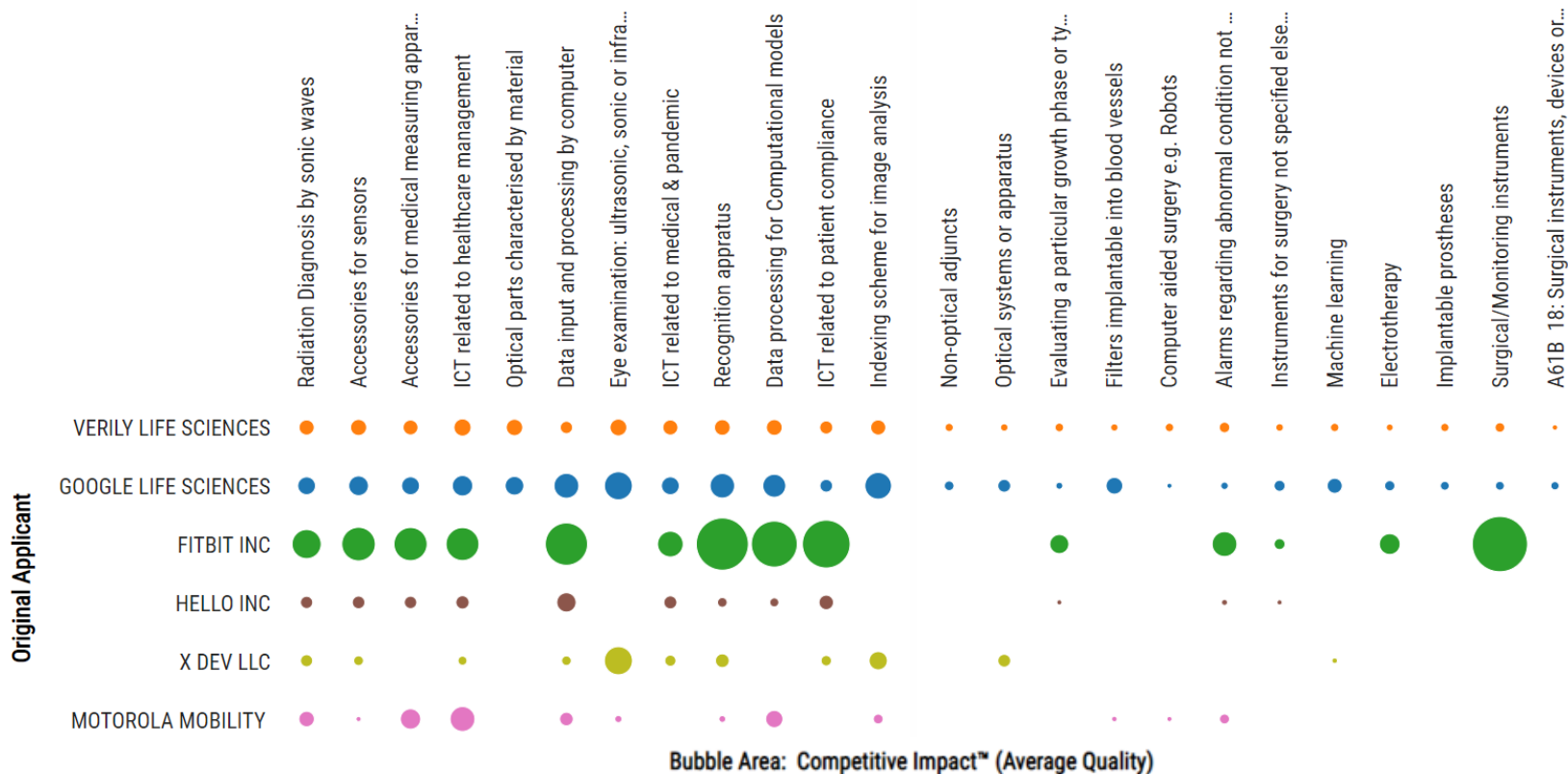
PUBLISHED THU, JAN 14 2021 9:20 AM EST | UPDATED THU, JAN 14 2021 11:25 AM EST

KEY POINTS

- Alphabet-owned Google announced Thursday it's completed its acquisition of Fitbit.
- The deal had been subject to a months-long probe into whether it could further push Google's market position in the online advertising business if it uses Fitbit data to help personalize ads.
- "This deal has always been about devices, not data, and we've been clear since the beginning that we will protect Fitbit users' privacy," Google's Senior Vice President of devices and services Rick Osterloh said in a statement.

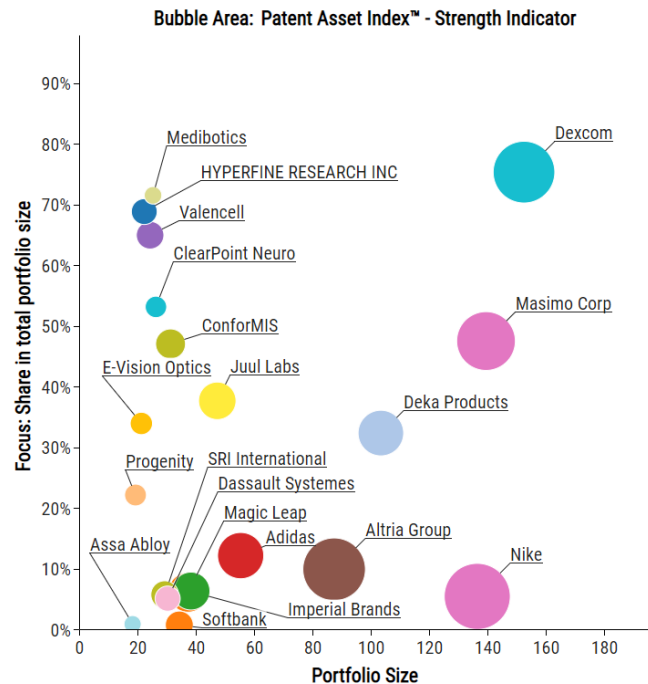
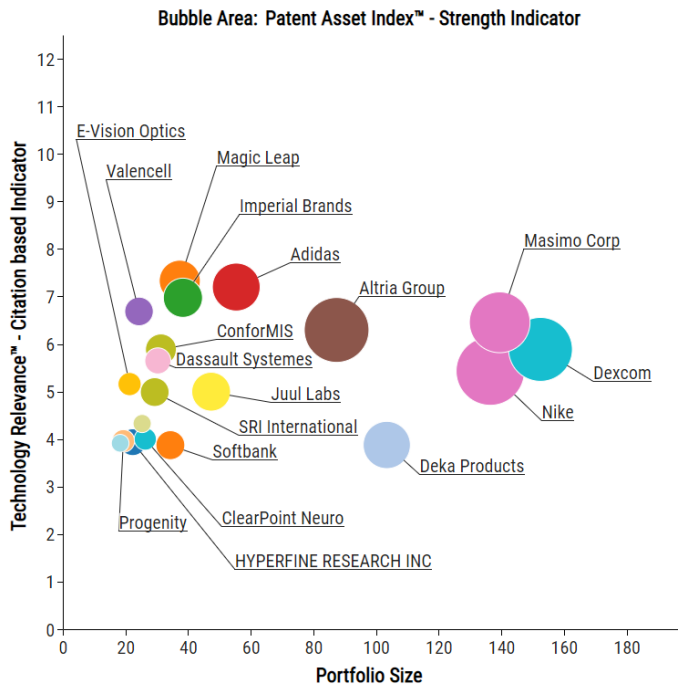
<https://www.cNBC.com/2021/01/14/google-closes-its-fitbit-acquisition.html>

Comparative analyses of strength of Original Applicants in different areas



Small or Emerging Players in the field of Health Care Technology / Digital Health

Top 20 entities on the basis of Forward Citations



- Owner**
- Magic Leap
 - Adidas
 - Imperial Brands
 - Valencell
 - Masimo Corp
 - Altria Group
 - Dexcom
 - ConforMIS
 - Dassault Systemes
 - Nike
 - E-Vision Optics
 - Juul Labs
 - SRI International
 - Medibotics
 - ClearPoint Neuro
 - Progenity
 - HYPERFINE RESEARCH INC
 - Assa Abloy
 - Deka Products
 - Softbank

Glimpse of HYPERFINE RESEARCH patents


Highlight keywords... Select Sorted by CI ↓

- Portable low-field magnetic resonance imaging methods and appa** 2017
 According to some aspects, a low-field magnetic resonance imagin...
 HYPERFINE RESEARCH INC, JORDAN JEREMY CHRISTO... EP3544501.A1
- Methods and apparatus for magnetic field shimming** 2017
 A method of producing a permanent magnet shim configured to imp...
 HYPERFINE RESEARCH INC EP3433624.A1
- Automatic configuration of a low field magnetic resonance imagin.** 2015
 In some aspects, a method of operating a magnetic resonance imag...
 HYPERFINE RESEARCH INC EP3189340.A1
- Systems and methods for automated detection in magnetic reson.** 2017
 Some aspects include a method of detecting change in biological s...
 HYPERFINE RESEARCH INC EP3545494.A1
- Methods and apparatus for patient positioning in magnetic resona** 2019
 According to some aspects, a magnetic resonance imaging system ...
 HYPERFINE RESEARCH INC US2020022611.A1
- Deep learning techniques for magnetic resonance image reconstr.** 2019
 A magnetic resonance imaging (MRI) system, comprising: a magnet...
 HYPERFINE RESEARCH INC US2020033431.A1
- Radio frequency coil methods and apparatus** 2016
 Aspects relate to providing radio frequency components responsive ...
 HYPERFINE RESEARCH INC EP3294129.A1
- Deployable guard for portable magnetic resonance imaging device** 2019
 According to some aspects, an apparatus is provided comprising a ...
 HYPERFINE RESEARCH INC EP3781959.A1
- Medical imaging device processing system** 2016

Click here to tag patents... ⚙️

Family of EP3189340.A1 et al

⏪ ⏩ ⚙️ In force

- Automatic configuration of a low field magnetic resonance imaging system**


First filing in family 9/4/2015
First publication in family 3/10/2016

No drawing available.




Inventors Charvat Gregory L, Laura Sacolick, Mileski William J, Fife Keith G, Matthew Scot Rosen, Rearick Todd, Jeremy Christopher J., Jonathan M Rothberg, McNulty Christopher ..., Michael Stephen Poole

Applicants Hyperfine Research Inc, Hyperline Res Inc

Family members (119)

Document #	Title	Publication date	Status
EP3189340.A1	Automatic configuration of a low field magnetic resonance imaging system	7/12/2017	Pending
AU2015311725.A1	Thermal management methods and apparatus	4/20/2017	Inactive
AU2015311749.A1	Ferromagnetic augmentation for magnetic resonance imaging	4/20/2017	In force
AU2015311749.B2	Ferromagnetic augmentation for magnetic resonance imaging	6/21/2018	In force
AU2015311925.A1	Low field magnetic resonance imaging methods and apparatus	4/20/2017	In force

Indicators Table...

Competitive Impact™ (CI)	25.9	
Market Coverage™ (MC)	2.9	
Technology Relevance™ (TR)	8.8	

Legal status today Legal events...

In force	AU, CA, CN, JP, MX, TW, US
Pending	BR, EP, KR
Inactive	WG

NEWS

HYPERFINE

Hyperfine's Swoop™ Portable MR Imaging System Chosen from among 4,000 submissions as a Fast Company World Changing Idea

May 04, 2021 09:00 ET

<https://www.globenewswire.com/en/news-release/2021/05/04/2222353/0/en/Hyperfine-s-Swoop-Portable-MR-Imaging-System-Chosen-from-among-4-000-submissions-as-a-Fast-Company-World-Changing-Idea.html>

Hyperfine Research Brings the Category-Defining Swoop™ Portable MR Imaging System on the Road with Demo at Your Door™

Featuring ground-breaking healthcare diagnostic imaging tech, Hyperfine will demonstrate the convenience, safety, and efficiency of portable MR imaging by traveling the nation to visit hospitals and clinics.

May 13, 2021 10:00 ET

<https://www.globenewswire.com/news-release/2021/05/13/2229260/0/en/Hyperfine-Research-Brings-the-Category-Defining-Swoop-Portable-MR-Imaging-System-on-the-Road-with-Demo-at-Your-Door.html>

Glimpse of Dexcom patents

Highlight keywords...

Select Sorted by CI ↓

- **Devices used in connection with continuous analyte monitoring th** 2014
Devices and methods for providing a user with alerts. The alerts ma...
Dexcom EP3062686.A1
- **Processing analyte sensor data** 2003
Systems and methods for processing sensor analyte data, including...
Dexcom EP2494921.A2
- **Transcutaneous analyte sensor** 2005
The present invention relates generally to systems and methods for...
Dexcom EP1804650.A1
- **Signal processing for continuous analyte sensor** 2004
A method for estimating an analyte value from a continuous analyt...
Dexcom EP1711791.A2
- **Integrated delivery device for continuous glucose sensor** 2004
A method for treating diabetes with an integrated glucose sensor a...
Dexcom EP1718350.A1
- **Systems and methods for processing analyte sensor data** 2006
The present invention relates generally to systems and methods for...
Dexcom EP1991110.A2
- **Advanced continuous analyte monitoring system** 2011
The present invention relates generally to systems and methods for...
Dexcom EP2621339.A2
- **Transcutaneous analyte sensor** 2005
Abstract of the DisclosureThe present invention relates generally to...
Dexcom US2006019327.A1
- **Analyte sensor** 2006
Systems 600 and methods of use for continuous analyte measurem...
Dexcom EP2091409.A2

Family of EP1718350.A1 et al

● **Integrated delivery device for continuous glucose sensor**

A method for treating diabetes with an integrated glucose sensor and medicament delivery device, the method comprising: receiving sensor data from a glucose sensor, the sensor data comprising one or more sensor data points; calculating a medicament therapy recommendation based at least in part on the sensor data; validating the calculated therapy recommendation based on data input into a receiver, data obtained from a single point glucose monitor, or combinations thereof; and outputting information reflective of the calculated therapy recommendation responsive to a validated calculated therapy recommendation. (Source: EP1718350.A1, equivalent)

Inventors Brauker James H, Dobbles John Michael, Dobbles Mike, Kamath Apurv Ullas, Magalingam Aart, ...

Applicants Brauker James H, Dexcom Inc, Dobbles Mike, Kamath Apurv Ullas, Magalingam Aarthi, Mahalin, ...

Dexcom

First filing in family 2/26/2004

First publication in family 9/1/2005

No drawing available.

Family members (57)

Document #	Title	Publication date
EP1718350.A1	Integrated delivery device for continuous glucose sensor	11/8/2006 National A E
EP1718350.A4	Integrated delivery device for continuous glucose sensor	5/30/2007 National A E
EP1718350.B1	Integrated delivery device for continuous glucose sensor	5/1/2013 National A E
EP2223710.A1	Integrated delivery device for continuous glucose sensor	9/1/2010 Inactive A E
EP2226086.A1	Integrated delivery device for continuous glucose sensor	9/9/2010 Inactive A E

Indicators Table...

Competitive Impact™ (CI)	38.4	
Market Coverage™ (MC)	2.0	
Technology Relevance™ (TR)	19.5	

Legal status today Legal events...

In force	DE, FR, GB, US
Nationalized	EP
Pending	-

Prior art (1211) Expand all

	Filed	PAI
Dexcom	1987-2010	759.0
Medtronic	1981-2009	555.4

Subsequent art (546) Expand all

	Filed	PAI
Dexcom	1997-2019	913.5
Abbott Laboratories	1994-2019	615.1

Click here to tag patents... ⚙️

NEWS

Dexcom G6 CGM System Approved for Back of Upper Arm Wear, Offering Adults with Diabetes Greater Freedom

Français

NEWS PROVIDED BY

Apr 20, 2021 09:00 ET

SHARE THIS ARTICLE



- *Dexcom G6 gives people with diabetes the power to manage their condition without fingersticks* or scanning*
- *Proven to improve glycemic control and can reduce the risk of costly long-term diabetes-related complications compared to fingerstick monitoring¹*

BURNABY, BC, April 20, 2021 /CNW/ - Dexcom, Inc. (NASDAQ: DXCM), a leader in real-time continuous glucose monitoring (CGM), today announced the company has received Health Canada authorization for the Dexcom G6 CGM System to be worn on the back of the upper arm by adults 18 and older. The new indication will give adult users more ways to comfortably wear the Dexcom G6 CGM System than ever before.



Individual wearing the Dexcom G6 CGM System on the back of the upper arm (CNW Group/Dexcom, Inc.)

<https://www.newswire.ca/news-releases/dexcom-g6-cgm-system-approved-for-back-of-upper-arm-wear-offering-adults-with-diabetes-greater-freedom-893137096.html>

Glimpse of Masimo Corp patents

Highlight keywords... Select Sorted by CI ↓

- Wireless patient monitoring systems and methods** 2016
 A patient monitoring system to help manage a patient that is at risk...
 Masimo Corp EP3344123.A2
- Connector assembly with pogo pins for use with medical sensors** 2016
 Various connector and sensor assemblies are described. In some e...
 Masimo Corp EP3254339.A1
- Fold flex circuit for optical probes** 2016
 The present invention relates to a sensor assembly, said sensor incl...
 Masimo Corp EP3253289.A2
- System for pairing a medical system to a network controller by us** 2018
 A first medical device can acquire a physiological parameter value f...
 Masimo Corp EP3622529.A1
- Opioid overdose monitoring** 2019
 An overdose of opioids can cause the user to stop breathing, resulti...
 Masimo Corp EP3801207.A1
- Mobile patient alarm display** 2019
 This disclosure describes example alarm notification systems that ...
 Masimo Corp EP3782165.A1
- Acoustic respiratory monitoring sensor having multiple sensing el** 2010
 The present invention relates to an acoustic sensor for non-invasive...
 Masimo Corp EP2488106.A2
- Patient connector assembly with vertical detents** 2019
 The present disclosure includes a connector assembly that is a part...
 Masimo Corp US2020113496.A1
- Combining multiple qeeg features to estimate drug-independent s** 2020
 The present disclosure describes systems and methods of estimati...
 Masimo Corp US2020253544.A1

Click here to tag patents... ⚙️

Family of EP3344123.A2 et al ⏪ ⏩ ⚙️ In force

- Wireless patient monitoring systems and methods**

A patient monitoring system to help manage a patient that is at risk of falling is disclosed. The system includes a patient-worn wireless sensor that senses the patient's motion and wirelessly transmits information indicative of the sensed motion to a patient monitor. The patient monitor receives, stores, and processes the transmitted information to determine whether the patient has fallen or is about to fall. Upon such detection, the system can notify the patient's caretakers that the patient has fallen or is about to fall and therefore, is in need of immediate attention. (Source: EP3344123.A2, equivalent)

Inventors Ali Ali Ammar, Forrest Kevin, Raths Cornelius, Usman Mohammad
Applicant Masimo Corp

Family members (20)

Document #	Title	Publication date
EP3344123.A2	Wireless patient monitoring systems and methods	7/11/2018 Pending 📄 🔍 🗑️
AU2016315947.A1	Wireless patient monitoring systems and methods	3/8/2018 In force 📄 🔍 🗑️
AU2016315947.B2	Wireless patient monitoring systems and methods	2/18/2021 In force 📄 🔍 🗑️
CA2996196.A1	Wireless patient monitoring systems and methods	3/9/2017 Pending 📄 🔍 🗑️
CM100249162.A	Wireless patient monitoring systems and methods	7/21/2019 Patent 📄 🔍 🗑️

Indicators Table...

Indicator	Value	Trend
Competitive Impact™ (CI)	63.2	📈
Market Coverage™ (MC)	2.5	📈
Technology Relevance™ (TR)	25.3	📈

Legal status today Legal events...

Status	Regions
In force	AU, US
Pending	CA, CN, EP, JP, KR
Inactive	WG

Prior art (952) Expand all

Applicant	Filed	PAI
Masimo Corp	1988-2019	1.98k 📊
Sotera Wireless	1-2015	273.2 📊

Subsequent art (173) Expand all

Applicant	Filed	PAI
Masimo Corp	1999-2020	1.01k 📊
Johnson & Johnson	2013-2019	166.8 📊

No drawing available.

NEWS

Masimo Announces FDA Clearance of Radius PCG™ for the Root® Patient Monitoring and Connectivity Platform

Radius PCG with Bluetooth® Connectivity Seamlessly Integrates Tetherless Mainstream Capnography with Root



Masimo Root® with Radius PCG™ (Photo: Business Wire)

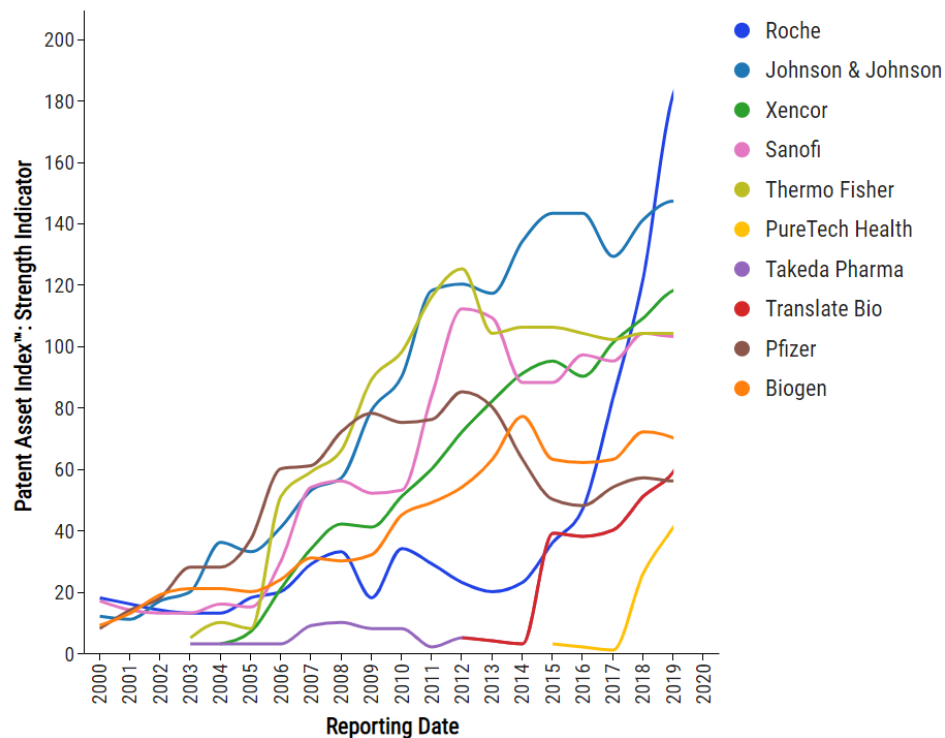
April 12, 2021 08:00 AM Eastern Daylight Time

IRVINE, Calif.--(BUSINESS WIRE)--Masimo (NASDAQ: MASI) announced today that Radius PCG™, a portable real-time capnograph with wireless Bluetooth® connectivity, has received FDA 510(k) clearance. Radius PCG connects with the Root® Patient Monitoring and Connectivity Platform to provide seamless, tetherless mainstream capnography for patients of all ages. Radius PCG joins the growing family of tetherless Masimo technologies that includes Radius PPG™, which offers Masimo SET® Measure-through Motion and Low Perfusion pulse oximetry, and Radius T°™, which provides continuous temperature measurements. Radius PCG requires no routine calibration, with accurate end-tidal carbon dioxide (EtCO₂) and respiration rate measurements and continuous EtCO₂ waveforms displayed within 15 seconds—all in a small, portable package that can fit in the palm of a hand.

<https://www.businesswire.com/news/home/20210412005449/en/Masimo-Announces-FDA-Clearance-of-Radius-PCG%E2%84%A2-for-the-Root%C2%AE-Patient-Monitoring-and-Connectivity-Platform>

**Health Care Technology /
Digital Health
In
Neurological disease: Alzheimer's**

Time evolution of Patent Asset Index™



- The field has been narrowed down to focus on the application of Health Care technology on Neurological diseases especially Alzheimer's
- The top 10 “operating companies” as per the Patent Asset Index are selected.
- The time evolution of the Patent Asset Index of the companies based on the retrieved patents satisfying the criteria is shown.

Glimpse of Roche patents

neuro diseases Alzheimer Select Sorted by CI ↓

- Biomarkers and methods of treating pd-1 and pd-1 related conditi** 2014
 Provided herein are biomarkers for the treatment of pathological co...
 Roche EP2972373.A2
- Diazacarbazole derivatives as tau-pet-ligands** 2014
 The present invention relates to compounds that may be used for bi...
 Roche EP3055308.A1
- Digital biomarkers for cognition and movement diseases or disor.** 2017
 A method for assessing a cognition and movement disease or disor...
 Roche EP3512424.A1
- Anti-tau antibodies and methods of use** 2016
 The invention provides anti-Tau antibodies and methods of using th...
 AC Immune, Roche EP3303386.A1
- Bridged piperidine derivatives** 2017
 The present invention relates to a compound of formula (I), wherein...
 Roche EP3519418.A1
- Methods for treating progressive multiple sclerosis** 2009
 The present invention concerns methods for treating progressive m...
 Roche EP3095463.A2
- Digital qualimetric biomarkers for determining information proces** 2019
 A method for automatically assessing information processing spee...
 Roche EP3790464.A1
- Imidazo[1,2-a]pyridin-7-amines as imaging tools** 2014
 The present invention relates to compounds that may be used for bi...
 Roche EP3049411.A1
- Bicyclic heteroaryl derivatives** 2017
 The present invention relates to a compound of formula I, 1-1 or 1-2...
 Roche EP3535266.A1

[Click here to tag patents...](#) ⚙️

Family of EP3512424.A1 et al In force

Digital biomarkers for cognition and movement diseases or disorders

Roche
 First filing in family 9/14/2017
 First publication in family 3/22/2018

No drawing available.

Inventors Baker Mike, Belachew Shibeshih Mitiku, Gossens Christian, Lindemann Michael
Applicant Hoffmann La Roche

Family members (5)

Document #	Title	Publication date
Ⓞ EP3512424.A1	Digital biomarkers for cognition and movement diseases or disorders	7/24/2019 Pending 📄 🔍
Ⓞ CN109688926.A	Digital biomarkers for cognition and movement diseases or disorders	4/26/2019 Pending 📄 🔍
Ⓞ JP2019531569.A	Cognitive disorders or disorders of and operation	10/31/2019 In force 📄 🔍
Ⓞ US2019200915.A1	Digital biomarkers for cognition and movement diseases or disorders	7/4/2019 Pending 📄 🔍
Ⓞ WO2019050763.A1	Digital biomarkers for cognition and movement diseases or disorders	3/22/2019 In force 📄 🔍

Indicators

Indicator	Value	Legal status today
Competitive Impact™ (CI)	20.3	In force JP
Market Coverage™ (MC)	2.1	Pending CN, EP, US
Technology Relevance™ (TR)	9.7	Inactive WO

Prior art (6)

	Filed	PAI
Maxell Holdings	2013-2014	11.7
Cleveland Clinic	2010-2013	6.0

Subsequent art (12)

	Filed	PAI
Roche	2019-2020	66.8
University of Oxford	2019	3.4

NEWS

Roche receives Breakthrough Device Designation from FDA for new Alzheimer's disease assays

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View Supplier Profile

Jul 24 2018

Roche announced today, that the U.S. Food and Drug Administration (FDA) has granted Breakthrough Device Designation to Elecsys[®] β -Amyloid (1-42) CSF and Elecsys[®] Phospho-Tau (181P) CSF. These *in vitro* diagnostic immunoassays are for the measurement of the β -Amyloid (1-42) and Phospho-Tau concentrations in cerebrospinal fluid (CSF) in adult patients with cognitive impairment who are being evaluated for Alzheimer's disease (AD) or other causes of dementia.

<https://www.news-medical.net/news/20180724/Roche-receives-Breakthrough-Device-Designation-from-FDA-for-new-Alzheimers-disease-assays.aspx>

Before signing off...

Glimpse of recently filed patent

Family of CN111687855.A

Construction site emergency management system

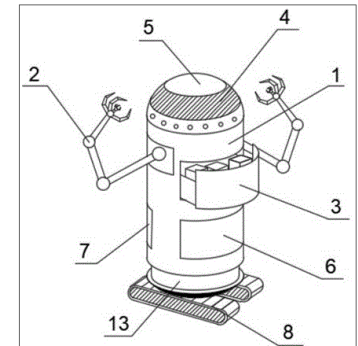
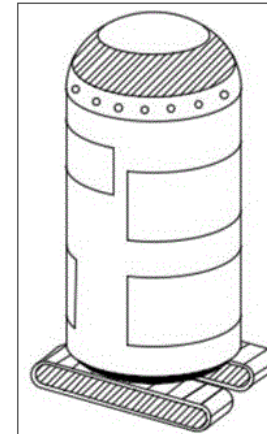
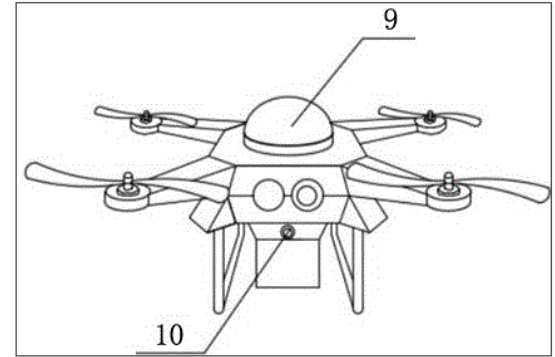
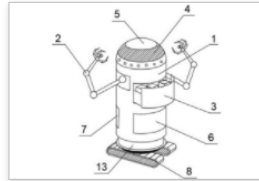
The invention relates to a construction site emergency management system. The construction site emergency management system comprises an **intelligent robot**, an **intelligent detection device** and a **drone disinfection unit**, the intelligent robot is connected with a **grade-A tertiary hospital health system**, the **intelligent robot**, the **drone disinfection unit** and a **monitoring group** are connected with an administrator computer data terminal and a cloud database, the intelligent robot comprises a robot main body, mechanical arms arranged on the two sides of the robot body, a throat swab sample storage box arranged in the center, a medical high-definition camera, a voice guiding device, a medical material storage box arranged at the lower portion, a daily material storage box, a moving device arranged at the bottommost portion and a telescopic device arranged at the bottom, wherein the medical high-definition camera and the voice guiding device are arranged at the top of the robot, and the intelligent detection device comprises a body temperature detector, a heart rate detector, a virus nucleic acid detector and an alarm device. The construction site emergency management system is novel in design, high in practicability, high in safety degree, good in timeliness, high in social benefit, good in development prospect and high in intelligent degree. (Source: CN111687855.A, original)

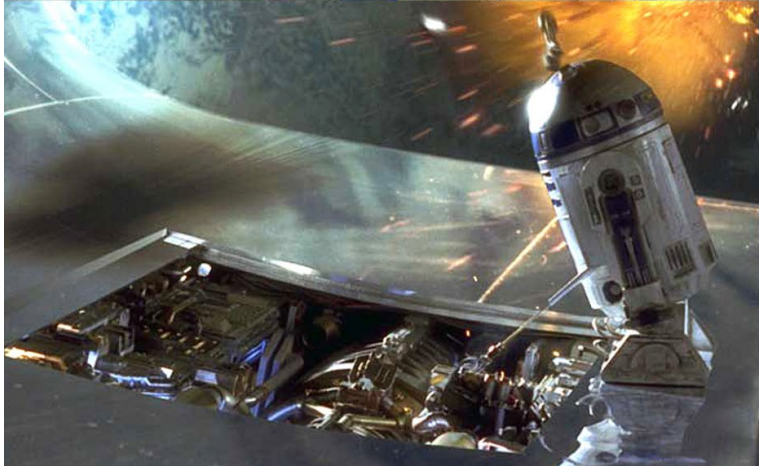
Inventors	Chen Liang	Chen Lingkun	Kang Aihong
	Lu Xingyu	Song Xingyu	Tao Junbo
	Xiao Jiang	Xue Mei	Yuan Ruipeng
Applicant	Univ Yangzhou		

 Yangzhou University

First filing in family 6/19/2020

First publication in family 9/22/2020





Thank you!



Would you like more information about today's presentation?

www.PatentSight.com

Sachin Sharma

sachin.sharma.2@lexisnexis.com

Sarbani Chattopadhyay

Sarbani.Chattopadhyay@lexisnexis.com

Appendix

Patent Search AND Analysis in LexisNexis | PatentSight

- LexisNexis | PatentSight has access to more than 100 million patent documents from 95 authorities.
- The Full Text Search: not only in **English language** documents but also **English-language versions** (original texts, machine translations, OCRed documents) of non-English patents. Wild card operators and the Boolean operators in patent searching and all the analytics filters are available for patent searching.
- The retrieved patent owning entities are assessed based on the unique **scientifically validated*** and **patented KPIs of LexisNexis | PatentSight** .
- This combination of search and analytics is expected to retrieve the key companies that can contribute to the field.

*Ernst H, Omland N. The Patent Asset Index—A new approach to benchmark patent portfolios. World Patent Information. 2011 Mar 1;33(1):34-41.

Patent Search in LexisNexis PatentSight: Excerpts from the current search

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