EffectUal Services

Intelligence That Matters

Monthly Newsletter from Effectual Services

Dear Readers,

Welcome to NewsEffect – April 2023

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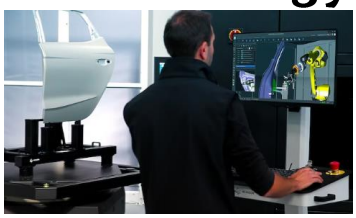
Digital Twin Technology



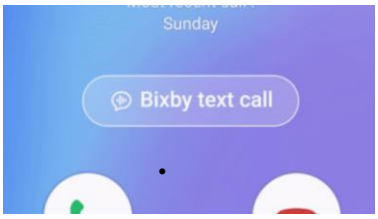



- Marelli builds Cabin Digital Twin, leveraging AWS cloud services and QNX software. This end-to-end infrastructure to replicate cabin hardware and software, accelerates vehicle software development, significantly reducing costs for automotive OEMs and allowing them to bring innovations to market faster. Marelli states that its DigiMate represents a breakthrough opportunity for OEMs to bring innovative connected vehicle services to market more quickly and efficiently. The technology is designed to streamline simulations, validation, and testing activities, eliminating the need for multiple physical cabins. Instead, the virtual cabin replica can run thousands of instances in parallel on the cloud, significantly reducing development timelines.
- WAE Technologies (WAE) has launched a software platform that runs on a battery management system (BMS) and a digital twin for mass market applications from the automotive, commercial vehicle and e-mobility sectors to stationary energy storage. The Elysia Cloud Platform is a cloud-based system which uses proprietary digital twin technology. By providing a complete picture of the battery's state of health, it brings much-needed transparency, while enabling accurate verification of degradation and in-life fault-finding, offering the potential to for the second-life battery market where WAE has been active. Williams looks to use racing car batteries for home storage. Analog Devices teams with German battery digital twin firm on BMS $30m for German battery digital twin developer.
- Accenture Invests in Virtonomy to Help Medical Technology Companies Use Digital Twin Technology to Accelerate Time to Market for Medical Devices. Virtonomy's digital twin simulation solution enables medical device manufacturers to build model patient virtual environments for device testing at a reduced cost and with a lesser degree of regulatory complexity. The solution is based on an ever-expanding database of real clinical data that reflects factors such as anatomical variability, demographic diversity, and pathological conditions.
- Rethinking sustainable mobility in a new, digital landscape. Ricardo's marine project NEPTUNE uses digital twin technology and AI-based predictive technology to understand how to effectively deploy EV charging infrastructure, which could boost the industry. NEPTUNE researchers are developing a desk-based decision modeling and support system (DEMOSS) tool to help reduce the planning and implementation costs of a zero-carbon energy system. The results could help EVs achieve optimal charging with a minimal carbon footprint.
- Hexagon Launches PRESTO Robotic Inspection Cell. Hexagon's Manufacturing Intelligence division launched its new automated robotic inspection cell PRESTO, enabling manufacturers to reduce quality inspection times, increase efficiency, and streamline workflows. PRESTO can be fully programmed offline with a digital twin of the cell. This allows the programmer to progress the quality inspection set-up while the operator is conducting the measurements, offering maximum equipment efficiency and return on investment. Data from the inspection can also be compared to the digital twin, ensuring that design matches reality.
- Siemens and XPeng Reach Strategic Cooperation. On April 18, Siemens signed a strategic cooperation agreement with Chinese electric vehicle company XPeng Motors. Siemens will use its digital twin technology and strong industrial software capabilities to support the planning, construction, continuous optimization, and upgrading of XPeng's digital factory transformation, forming a highly flexible intelligent production system to shorten its product development cycle and improve quality.

Disruptive Technology Leads

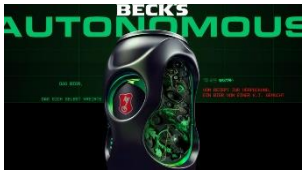
- Insomnia treatment: Cognitive behavioral therapy instead of sleeping pills. Thoughts and behaviors cause sleep problems or make them worse. These thoughts and behaviors can be replaced with habits that support sound sleep. Unlike sleeping pills, CBT helps overcome the causes of sleep problems.
- Mobile ultrasound for improved cardiac care in underserved settings. The project explores the utility of Philips' point-of-care ultrasound – and mobile ECG solution of iMedrix – in Siaya County, Kenya, and its influence on CVD outcomes. The project has already supported the development and dissemination of CVD triage algorithms, trained more than 100 health workers on CVD screening, triage, management, and referral – and equipped primary healthcare facilities with CVD risk screening equipment.
- On April 04, Researchers have developed a novel combination therapy using the anticancer agent mitoxantrone (MTX) , together with an antibiotic, vancomycin, for treating bacteria that are resistant to the vancomycin, which are also known as vancomycin-resistant Enterococcus faecalis or VRE. The therapy uniquely targets both VRE and the host, stimulating the host immune system to more effectively clear bacterial infections and accelerate infected wound healing. The work was led by scientists at the Antimicrobial Resistance (AMR) interdisciplinary research group at Singapore-MIT Alliance for Research and Technology (SMART), MIT's research enterprise in Singapore, in collaboration with Singapore Centre for Environmental Life Sciences Engineering, Nanyang Technological University, MIT, and University of Geneva.
- MHRA Grants ADvantage Therapeutics Innovative Licensing and Access Pathway (ILAP) Designation for Novel Lead Product AD04™ for Phase 2b Trial in Alzheimer's Disease. ADvantage Therapeutics, Inc. ("ADvantage" or "the Company"), which is developing therapies to treat neurodegenerative conditions with a central focus on Alzheimer's Disease (AD), announced on April 05, that the Medicines and Healthcare products Regulatory Agency (MHRA), the United Kingdom National Competent Authority, has granted the Company's lead compound AD04™ an Innovation Passport for the treatment of AD under the Innovative Licensing and Access Pathway (ILAP).
- New Privacy-Enhancing Technology Revolutionizing Healthcare. A partnership was announced between Duality Technologies and TLVMC, enabling privacy-enhanced data technology (PET) for collaboration capabilities. This technology will empower organizations worldwide to maximize the value of their data, but without compromising on privacy or regulatory compliance. The Homomorphic Encryption toolkit enables users to collaborate on any encrypted data, but without ever decrypting it in the process. So, sensitive information is never revealed during the process and patient privacy is never put at risk.

Disruptive Technology Leads (Contd.)



- Robotic Jellyfish for cleaning ocean related pollution developed by Scientists at the Max Planck Institute for Intelligent Systems in Stutgart. Jellyfish-Bots with one electrode and six fingers or arms traps objects along a path and creates water currents around the body. The device constitutes electrohydraulic actuators through which electricity flows. The device receive power via actuators serving as artificial muscles, surrounded by air cushions together with soft and rigid components which stabilizes the robot, thus making it water-proof.
- A newly-developed photonic filter can separate communication signals from noise and suppress unwanted interference across the full radio frequency spectrum. Photonic filter is chip-sized microwave filter expected to be able to help next-generation wireless communication technologies convey data in an environment. This new microwave filter chip has the potential to improve wireless communication, such as 6G.
- SentinelOne unveils new AI platform for cybersecurity. SentinelOne is a global leader in autonomous security and pioneer in deep learning models and neural networks. The SentinelOne threat-hunting platform seamlessly fuses real-time, embedded neural networks and a large language model (LLM)-based natural language interface and supercharging users with AI to monitor.
- Hyundai has developed a novel rollable screen to declutter a car's dashboard. The screen was created by Hyundai and its Mobis technology unit to take up a smaller space by rolling the screen up. Additionally, this screen capability is available without affecting any screen quality, such as a high-resolution display. According to the company, this is the first time the technology has been used by the automotive industry as by taking it from the world of smartphones. The usage of Organic Emitting Diode (OLED) technology can enable technical improvement in automobiles. By adopting this technology, a flexible material rather than glass may be used to construct the display. The foldable screens will provide designers more opportunity for creativity and features on the dashboard.
- As the semiconductor business focuses on transistors, interconnect is gradually gaining importance. Marvell Technology reported that its advanced semiconductor interconnect technology have been successfully demonstrated on a 3nm node for the first time. Marvell has recently introduced a line of SerDes and parallel interconnect solutions for advanced semiconductor interconnects. Marvell introduced the industry's first 112 G 5nm SerDes for data centers in 2020 as part of its efforts to build high-performance, chip-to-chip interconnects for future computing infrastructure. Last week, the company announced the demonstration of its connection technology on a 3nm node, a continuation of its R&D operations. On TSMC's 3nm node, the business claims to have implemented their 122 G XSR SerDes, Long Reach SerDes, PICe Gen 6 SerDes, and a 240 Tbps parallel die-to-die interconnect.

Advancement in AI



- AB InBev's Beck's makes 'futuristic' beer using artificial intelligence. Becks is producing the world's first beer and full marketing campaign made with artificial intelligence. Beck's Autonomous, was selected by AI as its favorite among millions of different flavor combinations it generated. The "futuristic concoction" contains water, malts, hops, yeast and AI. Beck's Autonomous, it creates a new and novel product that generates publicity and taps into the red-hot AI trend, enabling the brew to stand out from its competitors.
- J'EVAR Leads the Fine Jewelry Industry with AI Technology for Carbon Neutral Diamond Jewelry. J'evar, a fine jewelry brand is setting a new standard in the diamond industry by utilizing AI technology in their product design. Inspired by AI created style variations Jevar's proprietary parametric technology then optimizes the design process, improving efficiency and speed, and reducing the time and costs. The AI-powered tools can analyze past customer data to predict future trends and create designs that are tailored to specific audiences, ensuring that the designs are both unique and on-trend. With a focus on sustainable and ethical behavior, J'evar uses carbon neutral lab-grown diamonds exclusively which offer a more environmentally friendly product.
- Enzolytics Announces Progress in the Development and Patenting of Feline Leukemia Monoclonal Antibodies. Enzolytics announced progress on its ongoing program to produce Monoclonal Antibodies to treat animals by filing a comprehensive patent application covering its identification of conserved neutralizable epitopes on the Feline Leukemia (FeLV) virus. Using the Company's AI technology, more than 26 immutable epitope sites on the FeLV virus have been identified. These sites are claimed in the filed patent application. The patent covers the use of conserved Feline Leukemia epitopes in the production of monoclonal antibodies, the production of vaccines, or use in diagnostic tests for detecting the virus in cats.
- Haut.AI claims to be the first company to incorporate generative AI for skin simulations. Haut.AI, a SaaS company specialising in artificial intelligence for skin, hair, and wellness analytics, has just announced its new generative AI tech for modelling skin conditions – SkinGPT. Haut.AI's SkinGPT combines generative pre-trained transformers, diffusion models, GANs, and classical computer vision models, enabling the creation of photorealistic images. Image-to-image and noise-to-image conversion techniques are used, utilising computer vision models for a skin assessment and image generation. The tool is intended for beauty brands and retailers, who can implement it into their e-commerce retail.
- Krablr develops generative AI language to boost crab yields. Krablr, the real-time crab pricing engine for amateur fishermen, has announced yet another pivot in its business model. The company is now setting its sights on a new, cutting-edge technology: generative AI. The company's latest pivot is focused on developing a new language in which the company can communicate with crabs in order to convince them to breed more and increase yields. The company plans to use generative AI to develop a new language that will be optimized for communication with crustaceans. The company has already seen an increase in crab populations in areas where they have implemented their language prototype.
- FICO Granted 12 Patents Used in FICO Platform to Operationalize Real-Time Decisions and Maximize Customer Experiences. Global analytics software firm FICO, awarded 12 patents related to digital decisioning in the areas of blockchain model governance and artificial intelligence (AI) and machine learning technology. FICO's culture of innovation and leading position in AI solutions provides the ability to operationalize personal customer experiences and business outcomes at scale and in a timely manner.

IP News

- The Bank of New York (BNY) Mellon Corp. is facing claims of copyright infringement from iPurusa for allegedly using and installing copies of its automation tools without permission. iPurusa is a New Jersey software design company.
- Luxury brand Coach Inc. filed a federal lawsuit against three Colorado-based corporations. As it allegedly infringed Coach's trademarked designs by importing imitations handbags and wallets. Coach said that the logos and designs on the products are "substantially indistinguishable" from its own trademarked logos and designs.
- The Dana-Farber Cancer Institute Inc. and drugmakers Bristol-Myers Squibb Co., ER Squibb & Sons LLC, and Ono Pharmaceutical Co. sue AstraZeneca for allegedly infringing a lucrative cancer immunotherapy patent. Bristol Myers alleges that AstraZeneca's antibody-based drug fights cancer in the same way as Yervoy.
- The United States Supreme Court declined to hear an appeal by computer scientist Stephen Thaler to the US Patent and Trademark Office's rejection to grant patents for innovations developed by his artificial intelligence system. The US Patent and Trademark Office and a federal judge in Virginia both denied his patent applications for the ideas, claiming that DABUS is not a person. Last year, the patent-focused United States Court of Appeals for the Federal Circuit affirmed those decisions, stating that US patent law explicitly requires inventors to be human beings.
- Lidar tech company Ouster sues Hesai Group over patents. Ouster's complaints said that Hesai incorporated its digital lidar technology into the Shanghai-based company's sensors. Ouster accused Hesai's sensors of infringing five patents which covered core aspects of Ouster's digital lidar technology. It also asked the Delaware court for an unspecified amount of money regarding the damages.
- A brilliant kid has been tipped to become the UK's youngest female patent holder. The patent covers her design for an automated snow-clearing device, which she developed during an online DT class during the coronavirus a break. After developing the robot outfitted with a snow-melting kettle during the school day, the talented youngster, now nine, proceeded to work on it in order to turn it into a concept for a real product, which she called RoboSno™.
- Oppo is reportedly working on a new smartphone with a flexible display. However, unlike the Find N2 and Find N2 Flip, this model has a rollable display panel rather than a foldable screen. The rollable display from the Chinese smartphone manufacturer has several distinctive design aspects. The 91Mobiles found the new patent after seeing the document on CNIPA. In contrast to the foldable smartphones now on the market, this revolutionary display technology allows users to alter the device's form factor with a single touch. A product description and concept images for this prospective smartphone are included in the patent which seems like the device have a camera module on the rear with an LED flash. The module is housed between two parts of the rear panel that is joined together with the rollable display and its supporting structure.

IP News (Contd.)

- AB Science announces Masitinib patent granted in Japan for the treatment of amyotrophic lateral sclerosis. AB Science SA (Euronext - FR0010557264 - AB) announced on April 18, that the patent office of Japan has issued a Notice of Allowance (NOA) for a patent relating to methods of treating amyotrophic lateral sclerosis (ALS) with its lead compound Masitinib (JP 2022037132A). As a result, intellectual property protection for Masitinib is secured in ALS until 2037. Masitinib has also received orphan drug designation for ALS from both the European Medicines Agency (EMA) and the US Food and Drug Administration (FDA). This orphan drug designation provides 10 and 7 years of market exclusivity in Europe and the United States respectively, subsequent to product approval.
- Apple and Masimo face off in trial over patient monitoring patents. On April 4, a federal jury in central California will hear noninvasive patient monitoring company Masimo's claims that Apple stole trade secrets after hiring away two of Masimo's executives to work on the Apple Watch. Masimo has also accused Apple of infringing on patents protecting its blood oxygen-sensing technology. The trial will last 10 days, and may feature testimony from Apple CEO Tim Cook. Masimo scored a win against Apple in January, when a judge with the International Trade Commission ruled that Apple infringed upon Masimo's pulse oximeter patents.
- Amgen scores Otezla patent win in court to keep competition at bay. On April 20, Amgen scored a win for its blockbuster psoriasis drug Otezla (apremilast), as the California-based company announced the US Court of Appeals for the Federal Circuit affirmed its patent infringement lawsuit against Sandoz and Zydus Pharmaceuticals. This court decision gives the company five more years of market exclusivity before generics can enter the market.
- 'Carb' Treatment for Stroke Receives New U.S. Patent: Invention Designed to Treat Ischemic Stroke, Protect Brain Tissue from Injury and Minimize Size of Brain Infarct. On April 13, A new twist on a drug used to treat alcohol use disorder could double up as a treatment for stroke, the leading cause of disability and the third leading cause of death in the United States. Called "Carb" for short, this new formulation is designed to treat ischemic stroke, protect brain tissue against injury and minimize the size of a brain infarct. About 87 percent of all strokes are ischemic stroke, which occurs when a vessel supplying blood to the brain is obstructed. Jang-Yen (John) Wu, Ph.D., a Senior Schmidt Fellow and professor of biomedical science in Florida Atlantic University's Schmidt College of Medicine, has received a new patent from the U.S. Patent and Trademark Office titled, "Treatment for Ischemic Stroke," for his work related to Carbamathione, [S-(N,N diethylcarbamoyl)glutathioneas].

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