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Welcome to NewsEffect – November 2023

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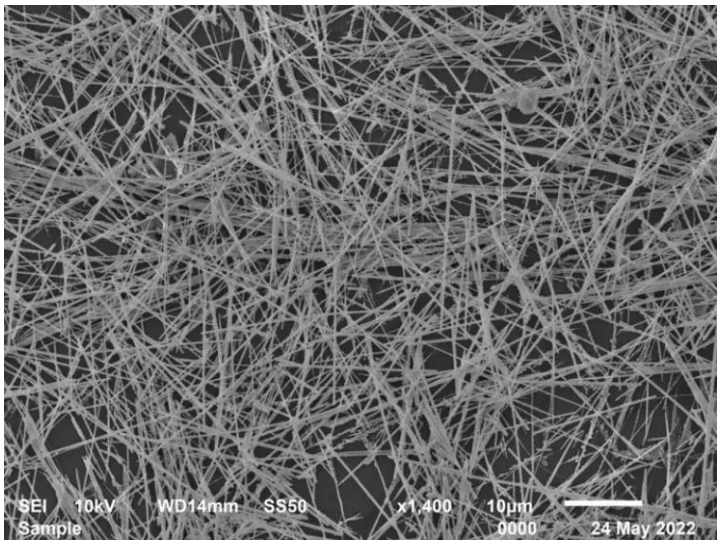
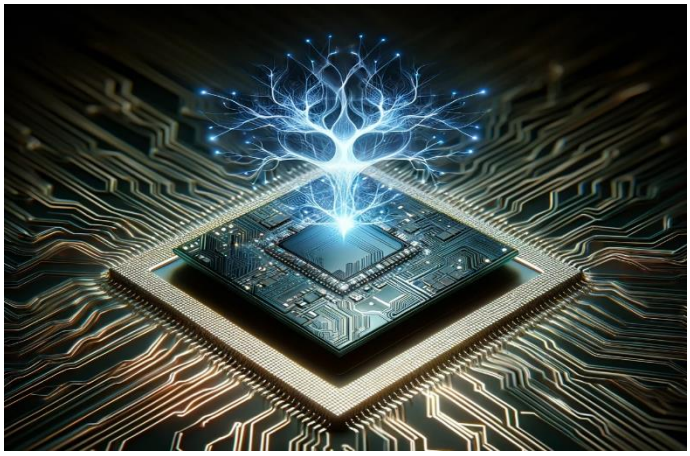
Artificial Brain



- Artificial brain learns on the fly with nanowire networks Scientists have created a new type of artificial brain that can learn and remember things on the go, just like our brains do. This could lead to more innovative and greener machines that can handle complex and changing data in the real world. The research, which was published today in Nature Communications, is a joint effort by experts from the University of Sydney and the University of California at Los Angeles. The artificial brain is made of nanowire networks, tiny wires a billion times smaller than a meter. The cables form random patterns that look like the game 'Pick Up Sticks,' but they also act like the neural networks in our brains. These networks can process information in different ways. The nanowire networks can learn and remember using simple rules that change the electrical resistance at the points where the wires cross. This is called 'resistive memory switching,' which happens when the cables get more or less conductive depending on the electrical signals they receive. This is similar to how our brain cells, or neurons, communicate with each other through synapses.

- Scientists Develop AI That Mirrors Human Neural Functions, Paving Way For Artificially Intelligent Brain-Like Systems Researchers at the University of Cambridge have developed a self-organizing, artificially intelligent brain-like system that emulates key aspects of the human brain's functionality. The study, published in Nature Machine Intelligence, reveals how imposing physical constraints on AI systems can lead to the evolution of brain-like characteristics, offering insights into human cognitive processes and the future of AI development. In the study, researchers successfully showed that by applying physical and energetic constraints to an AI system similar to those in human neural networks, they could develop an artificially intelligent brain-like system with organizational strategies and efficiencies akin to the human brain. The system was then tasked with solving a maze navigation challenge. This challenge, often used in brain studies involving animals like rats, requires integrating various pieces of information to find the maze's shortest path.

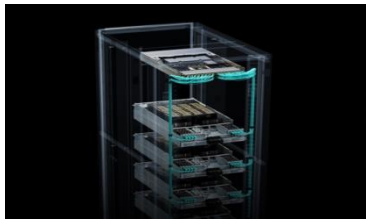
Artificial Brain (Contd.)



Duke Scientists Create Brain Implant That May Enable Communication From Thoughts Alone A speech prosthetic developed by a collaborative team of Duke neuroscientists, neurosurgeons, and engineers can translate a person's brain signals into what they're trying to say. Appearing Nov. 6 in the journal Nature Communications, the new technology might one day help people unable to talk due to neurological disorders regain the ability to communicate through a brain-computer interface. "There are many patients who suffer from debilitating motor disorders, like ALS (amyotrophic lateral sclerosis) or locked-in syndrome, that can impair their ability to speak," said Gregory Cogan, Ph.D., a professor of neurology at Duke University's School of Medicine and one of the lead researchers involved in the project. "But the current tools available to allow them to communicate are generally very slow and cumbersome." To improve on past limitations, Cogan teamed up with fellow Duke Institute for Brain Sciences faculty member Jonathan Viventi, Ph.D., whose biomedical engineering lab specializes in making high-density, ultra-thin, and flexible brain sensors. Overall, the decoder was accurate 40% of the time. That may seem like a humble test score, but it was quite impressive given that similar brain-to-speech technical feats require hours or days-worth of data to draw from. The speech decoding algorithm Duraivel used, however, was working with only 90 seconds of spoken data from the 15-minute test.

- Spinal Implant Helps a Man With Severe Parkinson's Walk With Ease Again In his mid-30s, Marc Gauthier noticed a creeping stiffness in his muscles. His hand shook when trying to hold steady. He struggled to maintain his balance while walking. Gauthier has Parkinson's disease. The debilitating brain disorder gradually destroys a type of brain cell related to the planning of movement. In 2021, he signed up for a highly experimental trial. He had a small implant inserted into his spinal cord to directly activate nerves connecting his spinal cord and leg muscles. While extensively tested in non-human primates with symptoms resembling Parkinson's, the therapy had never been tried in humans before. Once Gauthier adapted to the implant, he found he could stroll the banks of Lake Geneva in Switzerland without any aid after three decades living with the disease. "I can now walk with much more confidence," he said in a press conference. Two years after the implant, "I'm not even afraid of stairs anymore."

Disruptive Technology Leads



- During #RSNA23, Philips unveiled groundbreaking AI-powered innovations aimed at revolutionizing healthcare efficiency and patient-centric care. Among the highlights were advanced ultrasound systems like EPIQ Elite 10.0 and Philips Affiniti, promising elevated diagnostic precision and streamlined workflows. The introduction of BlueSeal MR Mobile, a pioneering helium-free mobile MRI system, extends MRI services globally. Additionally, their cloud-based HealthSuite Imaging on AWS introduces cutting-edge AI solutions, enabling rapid remote access and seamless reporting.

- Sony recently announced its development of 'in-camera authenticity technology' aimed at countering the surge of manipulated images facilitated by generative AI, which poses a significant threat to trust in news sources. This innovative feature, a digital signature essentially providing a 'birth certificate for images,' will accompany upcoming Sony cameras. It's expected to include comprehensive metadata, offering details about the image's capture time, potential edits, and the camera model used. Collaborating with The Associated Press and Camera Bits, Sony tested this technology to evaluate its field performance, targeting a Spring 2024 release through a global firmware update for select Alpha series cameras.

- Fujitsu has introduced groundbreaking technology, a first of its kind globally, enabling real-time optimization of CPU and GPU usage by dynamically allocating resources to prioritize high-efficiency processes, even amid GPU shortages. This innovation aims to address the current global deficit in GPUs, a consequence of soaring demand for generative AI and deep learning applications. Additionally, Fujitsu unveiled a parallel processing technology facilitating real-time switching between multiple programs within an HPC system, ensuring immediate execution of resource-intensive applications like digital twin and generative AI programs. These developments are expected to be integrated into a forthcoming computer workload broker, empowering AI to automatically select optimal resources based on user requirements.

- NASA's Psyche mission marks a breakthrough with its Deep Space Optical Communications (DSOC) technology, achieving 'first light' by beaming a laser-encoded message from nearly 10 million miles away. The innovative experiment aims to enable high-bandwidth laser communications, providing a glimpse into the future of space exploration. DSOC, part of the Psyche mission, received its inaugural data from NASA's Table Mountain Facility, showcasing laser technology's prowess by transmitting to the Hale Telescope. This accomplishment, while not sending scientific data, represents a milestone in laser communication across deep space. NASA envisions this pioneering optical communication as pivotal in enhancing data transmission and exploration in space missions. As Psyche continues its journey towards a metal asteroid, DSOC's success illuminates possibilities for futuristic space communication technologies.

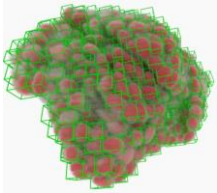
- NVIDIA has announced its collaboration with Dell Technologies, Hewlett Packard Enterprise (HPE), and Lenovo to integrate the groundbreaking NVIDIA Spectrum-X™ Ethernet networking technology into their server lineups. Aimed at accelerating generative AI workloads, this purpose-built Spectrum-X offers a new class of Ethernet networking, boasting 1.6x higher performance for AI communication compared to traditional Ethernet offerings. These new systems, a result of the collaboration, combine Spectrum-X with NVIDIA Tensor Core GPUs, AI Enterprise, and AI Workbench software. This integration provides enterprises with robust tools to leverage generative AI and transform their businesses. The systems, expected to arrive in the first quarter of next year, highlight a strategic move to propel the era of generative AI with accelerated networking and computing capabilities.

Disruptive Technology Leads (Contd.)

- At the Beijing International Radio, TV & Film Exhibition 2023 (BIRTV2023), China Media Group (CMG), China Unicom Beijing, and Huawei unveiled a pioneering 5G-Advanced-based ultra-high-definition (UHD) shallow compression encoding and real-time production system. This innovative technology leverages 5G-Advanced capabilities to offer higher image quality and reduced latency compared to conventional methods. Enabled by 5G-Advanced, this system introduces a breakthrough in wireless backhaul for ultra-high-bit-rate videos, marking a milestone in UHD shallow compression and real-time content production. With advanced features like ultra-narrow beams and millisecond-level latency, this technology promises diverse 5G-based production applications, driving digital transformation and elevating the media industry. The successful demonstration showcased the world's highest uplink bit rate and the lowest latency for UHD live broadcast, signifying a significant leap in real-time UHD production based on 5G-Advanced networks.
- Toyota is making substantial strides in the electric vehicle (EV) domain with the development of solid-state batteries, poised to revolutionize the sector. These batteries promise a groundbreaking driving range of 745 miles on a single charge while reducing charging time to just around 10 minutes. The company foresees these batteries in vehicles by 2027 or 2028, potentially addressing a major concern for consumers regarding EV driving range. Many individuals are hesitant to transition from fossil fuel-powered cars due to range anxiety, as evidenced by a poll indicating a preference for gas-powered vehicles for longer trips. Toyota aims to alleviate these concerns by securing access to Tesla's expansive Supercharger network in North America and adopting standardized charging infrastructure from 2025. While Toyota is optimistic about solid-state battery technology, they remain cautious about its gradual deployment.
- Primetals Technologies has introduced an innovative computer-vision-based solution at thyssenkrupp Hohenlimburg's hot-strip mill to detect strip cross cracks, marking the company's first-ever dedicated artificial intelligence system for this purpose. This digital assistant, equipped with machine learning capabilities, operates via a camera placed at the roughing mill's exit, scrutinizing a live video stream to swiftly identify cracks. By alerting operators immediately upon detection, it aims to prevent potential equipment damage by stopping transfer bars carrying these defects from entering the finishing mill. The system is designed for continuous improvement, employing self-learning mechanisms to enhance crack detection efficiency. This technology showcases Primetals Technologies' commitment to minimizing downtime and mitigating risks associated with equipment wear, demonstrating their partnership with thyssenkrupp Hohenlimburg in advancing steel production processes.
- The WVU Rockefeller Neuroscience Institute has conducted a pioneering study involving a groundbreaking "smart pill" technology that monitors vital signs and holds promise for detecting overdoses. Dr. Ali Rezai, RNI's Executive Director, highlighted the pill's ability to measure respiration, heart rate, body temperature, and intestinal movements. Initial trials involving ten participants with various disorders, including sleep apnea and heart irregularities, yielded success. Researchers are exploring its potential in addressing drug addiction and overdose situations during the opioid crisis, aiming to alert caretakers or first responders in the event of an overdose or respiratory depression. With a staggering number of overdose deaths in recent years, exceeding 100,000 in 2022 alone, this innovation presents a remote monitoring solution that could potentially save lives.

Advancement in AI





- New Perspectives on CONVERGE. AI: Limitless Disruption. CONVERGE brings together top minds from various industries to provide firsthand insights into how AI is revolutionizing work, businesses, and entire sectors. The lineup includes executives from Salesforce, Nubank, The Estée Lauder Companies, Natura & Co. Latin America, the Los Angeles Clippers, and the co-founders and CEOs of Globant itself. With an emphasis on creativity, the event pushes the boundaries of conventional thinking, offering groundbreaking insights into business reinvention and the future of technology. This year's CONVERGE centers its focus on AI, exploring its implications, such as data, ethics, and societal impact. Discussions will delve into harnessing technological evolution as a force for good, emphasizing the importance of maintaining a proper balance between human and artificial intelligence.
- Very Group expands link with AWS for generative AI. Very Group, the UK fashion/lifestyle digital retail giant has expanded its collaboration with Amazon Web Services (AWS) 'to accelerate retail innovation with generative AI'. A new 'Gen AI Innovation Lab' will be established by Very as part of the partnership. The lab will use machine learning, generative AI, and storage capacities to provide millions of customers with tailored and engaging digital purchasing experiences. By utilising AI to estimate product demand and plan inventories, Very has already successfully incorporated AI to improve business operations. This has improved product availability. But the recent partnership with AWS is a big step in the right direction for bringing AI to the retail sector.
- Netweb Technologies collaborates with NVIDIA to unlock potential of AI. Netweb Technologies India Limited (Netweb) today announced that it is now a manufacturing partner for the NVIDIA Grace CPU Superchip and GH200 Grace Hopper Superchip MGX server designs. Netweb will build and produce more than ten server variations under its Tyrone range of AI systems meant for a wide range of AI and high-performance computing/supercomputing applications.
- US, Britain, other countries ink agreement to make AI 'secure by design'. In a 20-page document unveiled Sunday, the 18 countries agreed that companies designing and using AI need to develop and deploy it in a way that keeps customers and the wider public safe from misuse. The agreement is non-binding and carries mostly general recommendations such as monitoring AI systems for abuse, protecting data from tampering and vetting software suppliers.
- Formula One trials AI to tackle track limits breaches Formula One's governing body is trialling artificial intelligence (AI) to tackle track limits breaches at this weekend's season-ending Abu Dhabi Grand Prix. The Paris-based FIA said it would be using 'Computer Vision' technology that uses shape analysis to work out the number of pixels going past the track edge. The AI will sort out the genuine breaches, where drivers cross the white line at the edge of the track with all four wheels, reducing the workload for the FIA's remote operations centre (ROC) and speeding up the response.
- AI threatens wages, not jobs - so far, ECB paper finds. The rapid adoption of artificial intelligence could reduce wages, but so far is creating, not destroying jobs, especially for the young and highly-skilled, research published by the European Central Bank showed on Tuesday. Firms have invested heavily in artificial intelligence, or AI, leaving economists striving to understand the impact on the labour market and driving fears among the wider public for the future of their jobs.
- AI under the microscope: the algorithms powering the search for cells. Deep learning is driving the rapid evolution of algorithms that can automatically find and trace cells in a wide range of microscopy experiments. The early days of computer-assisted segmentation required considerable hand-holding by biologists.

IP News

- Nike sues New Balance, Skechers for patent infringement: Nike has filed lawsuits against New Balance and Skechers, alleging that they have violated Nike's patents related to Flyknit technology. The lawsuits claim that New Balance's Fresh Foam, FuelCell, and other lines, as well as Skechers' Ultra Flex and Glide Step brands, infringe on Nike's patent rights. Flyknit technology is used by Nike for running, soccer, and basketball shoes. According to Nike's website, Flyknit technology "uses high-strength fibers to create lightweight uppers with targeted areas of support, stretch, and breathability." Nike has previously sued Adidas, Puma, and Lululemon for infringing Flyknit patents. While Adidas and Puma have settled their lawsuits, Nike's case against Lululemon is still ongoing. New Balance said in a statement that it fully respects competitors' intellectual property rights, but Nike does not own the exclusive right to design and produce footwear by traditional manufacturing methods that have been used in the industry for decades.
- Lenovo Asserts Patent Portfolio: Files patent infringement action against ASUS with United States International Trade Commission As part of the global technology corporation Lenovo Group, Lenovo (United States) Inc. filed a patent infringement action against ASUSTeK Computer Inc. and ASUS Computer International (ASUS) on November 15th with the United States International Trade Commission (ITC) for violating several of Lenovo's patents pertaining to hardware, software, and connectivity across various ASUS products. The case is in reaction to ASUS's August 2023 proceedings over cellular technologies in the Munich Regional Court; Lenovo had proposed a cross-licensing agreement as a remedy.
- British Engines (UK) Limited v. The Assistant Registrar of Trade Marks: In British Engines (UK) Limited v. The Assistant Registrar of Trade Marks, the UK-based company British Engines (UK) Limited is the appellant, attempting to register a trademark in India under application number 2769368. The case focuses on the Assistant Registrar of Trade Marks in Chennai's decision to deny their trademark registration in accordance with Sections 9 and 11 of the Trade Marks Act, 1999. British Engines (UK) Limited, the appellant, argued that their trademark is a device mark derived from their company name. They contended that as the mark does not relate to engines, it cannot be used to describe the products or any of their attributes. They also emphasized registrations that were obtained for the same mark in other non-Indian jurisdictions. The Assistant Registrar of Trade Marks, who was the respondent, argued that the trademark in question is made up of two descriptive words, "BRITISH" and "ENGINES". The former indicates the geographical origin, while the latter indicates the nature of the goods. The respondent also noted that the examination report cited multiple conflicting marks, which justified the rejection of the application. This case serves as a reminder of the necessity of clear and reasoned findings in trademark registration disputes.
- Mariah Carey sued for copyright infringement 'All I Want for Christmas is You' again Songwriter Vince Vance has filed lawsuit against Mariah Carey, alleging that she stole her holiday season chart-topping song "All I Want for Christmas is You" from one of his earlier songs. Carey is known as the Queen of Christmas, and her song has charted every holiday season since its release in 1994. The lawsuit claims that Carey's song infringes on Vance's intellectual property rights

IP News (Contd.)

- TCS told to pay $210 million to DXC Technology in another trade-secret case in US. TCS says it disagrees and plans to challenge the order. The fine comes barely a week after the Indian company said it would take a hit of $125 million in Q3 after the US Supreme Court upheld a penalty in a trade-secret case filed by Epic Systems.
- Judge Urges Discipline for Lawyers Who Hid IP Litigation Funder. Lawyers associated with Houston patent monetization firm IP Edge LLC are facing possible ethics inquiries after a judge said they used “shell” companies to obscure involvement in a string of patent lawsuits. The lawyers violated professional conduct rules in a scheme involving some 60 patent infringement suits in Delaware against Buzzfeed Inc., Imagine Learning, Inc., and CNET Media Inc., among others, Connolly found. IP Edge oversaw the litigation, but used LLCs to shield its involvement in the cases, Connolly said.
- European Patent Office declares Moderna mRNA patent invalid. The European Patent Office declared a contested mRNA patent owned by Moderna (MRNA.O) invalid, the office said on Tuesday, handing a win to BioNTech (22UAy.DE) and its partner Pfizer (PFE.N) in a patent dispute between the two coronavirus vaccine makers.
- The Surprising Reason Why Europe Denied Google’s Machine Translation Patent. Google’s Neural Machine Translation (MT) obtained a patent in the United States in 2017. On the European side, however, the European Patent Office (EPO) rejected (download) the application on October 30, 2023, eight years and seven days after first receiving it and reviewing multiple appeals, saying it is not an “inventive step.”
- Ford patents inflatable bumpers for its large SUVs & pickups. According to reports, the carmaker has patented an "inflatable bumper". As per the patents, the front of the SUVs and pickups will feature two inflatable bumpers, one from above the traditional bumper and the second one positioned slightly below. The two behave similarly to traditional airbags, in that, upon sensing an impact the membranes will inflate immediately via pyrotechnic or gas inflators.
- Anixa Biosciences Announces European Patent on Ovarian Cancer Vaccine Technology. Dr. Amit Kumar, Chairman and CEO of Anixa, stated, "Having recently been granted a U.S. patent for this novel ovarian cancer vaccine technology, we are delighted to receive the EPO's intention-to-grant notice, as a European patent would extend protection of the technology to additional potential markets.“
- Huawei Signs ‘Long-Term’ Cross-Licensing Patent Deal With Sharp. Huawei Technologies Co. Ltd. has struck a long-term cross-licensing patent agreement with Japan’s Sharp Corp., adding to its growing list of similar deals inked with global tech giants such as Xiaomi Corp. and Ericsson Inc. The deal covers cellular standard essential patents including 4G and 5G technologies.
- India granted record 41,010 patents in 2023-24 so far: Piyush Goyal. On this, Prime Minister Narendra Modi said this is a "notable feat" and it marks a milestone in India's journey towards an innovation-driven knowledge economy. "India's youth will be great beneficiaries of such strides," he said. The prime minister recently stated that the rise in patent applications in India demonstrates the rising innovative zeal of its youth and is a very positive sign for the times to come.

IP News (Contd.)

- EPO revokes Moderna patent in vaccine dispute with BioNTech Moderna and BioNTech are in a pan-European dispute over mRNA patents. The Opposition Division at the European Patent Office has revoked one of the patents-in-suit, which is a setback for Moderna. Moderna had sued BioNTech in several countries, including Germany, the UK, the Netherlands, Belgium, and Ireland. The dispute revolves around Moderna's two patents, EP 3 590 949 B1 and EP 3 718 565 B1, which protect "ribonucleic acids containing n1-methyl-pseudouracils and uses thereof" and "respiratory virus vaccines," respectively. While both patents are concerned with mRNA vaccines, they have different applications. EP 949 is concerned with claims concerning modified mRNA. EP 565 covers the "betacoronavirus mRNA-LNP vaccine," an improved substance for the prevention of contracting COVID and other respiratory diseases. Moderna alleges that Pfizer and BioNTech have copied two key features of Moderna's patented technologies that are critical to the success of mRNA vaccines.
- Delhi HC Restrains DJ Light And Sound Association In Copyright Infringement Suit Delhi High Court restrains DJ Light and Sound Association from propagating the message that no license needs to be taken from PPL before playing any song in which PPL holds copyright. In a Copyright Infringement Suit filed by Phonographic Performance Limited (PPL) before the Delhi High Court, the Delhi High Court injuncted the DJ Light and Sound Association from propagating the messages that no license needs to be taken from PPL before playing any recordings in which PPL holds copyright. DJ Light and Association was propagating the messages and writing to the government that no license is required to be taken from PPL, since it is not a registered copyright society.
- Chinese chipmaker YMTC sues Micron, alleges patent infringement Yangtze Memory Technologies Co. (YMTC), a Chinese chip manufacturer, has sued Micron Technology, a competing company based in the United States, claiming that eight of its patents have been violated. The case was filed by YMTC on November 9 in the U.S. District Court for the Northern District of California against Micron and its subsidiary, Micron Consumer Products Group. Micron is a competitor of South Korea's Samsung Electronics and SK Hynix, as well as Japan's Kioxia, a Toshiba subsidiary, in the DRAM and NAND flash memory chip markets. A much smaller competitor, YMTC was prohibited from purchasing certain American components by the United States last year. In 2018, Fujian Jinhua, a Chinese state-backed chipmaker, was involved in a legal fight with Micron over allegations of trade secret theft, which the company refuted.
- Nokia Vs Amazon Prime Video: Delhi High Court Takes On Patent Battle The Delhi High Court issued a notice to Amazon Prime Video, asking the streaming service to respond to allegations of patent infringement presented in a plea by Nokia. The court acknowledged the complexity of the case and the need for a detailed examination, and allowed the matter to be registered as a formal lawsuit. These patents are purported to cover a wide range of technologies, including hardware-related features, content distribution, video compression, and content recommendation. Nokia claims that Amazon is violating its intellectual property rights by using these technologies without the necessary authorization. Nokia has also brought comparable lawsuits against HP in the US. By directing Amazon to file its response to the plea, the court is initiating the legal process to further investigate the alleged patent infringement and will subsequently, evaluate the arguments presented by both parties to arrive at a fair and informed decision.

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