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A biweekly newsletter on AI and autonomy developments in China

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Welcome to the *China AI and Autonomy Report*, a biweekly newsletter published by CNA. Read in browser.

As the war in Ukraine continues, rumors have been circulating about the role of PRC-made drones in the conflict. In this issue we note two of them—allegations that Russia has asked the PRC to supply drones, and accusations that a leading PRC-based commercial drone manufacturer has been limiting the technical capabilities of drones used by the Ukrainian military in order to provide an advantage to the Russian armed forces. Meanwhile, PRC media outlets have been busy reporting the highlights from this year's National People's Congress and Chinese People's Political Consultative Conference meetings (known as the "two sessions"), including statements and proposals related to AI made by China's political and tech leaders. Policy suggestions by delegates included advocating for a more favorable policy environment for autonomous vehicles, the development of "green AI," government leadership in the creation of China's metaverse, and the creation of a legal framework for UAVs in China. As expected, PRC premier Li Keqiang discussed AI in the context of the development of the PRC's digital economy. We also cover a UAV built by a PRC research institute that reportedly set the record in China for the longest endurance capability and note that, for the first time in a phase 3 clinical trial in China, an AI chip was successfully implanted into an epilepsy patient's brain.

THIS WEEK'S CONTENTS

PRC DRONES AND THE RUSSIA-UKRAINE WAR

Russia reportedly asked the PRC for drones. On March 14, CBS News reported that, according to an unnamed US official, Russia has asked the PRC to supply drones to its military. The report came amidst US government accusations that Russia has asked the PRC for economic and military support for its invasion of Ukraine.[1] The PRC government has denied reports of the Russian request for military and economic assistance and of the PRC's willingness to provide such support, calling them "malicious disinformation."[2]

Leading PRC drone manufacture accused of limiting the capabilities of UAVs used by the Ukrainian military in order to provide Russian forces military advantage. In the ongoing war in Ukraine, both Russia and Ukraine are reportedly using drones made by Shenzhen-based DJI, a world leader in commercial drone production.[3] Citing sources inside Ukraine, on March 10 Volodymyr Shymanskyy, the co-founder of Blynk IoT, a software company with an office in Kyiv, accused DJI of limiting the capabilities of its AeroScope technology for the Ukrainian army. According to DJI, AeroScope technology "is able to identify the vast majority of popular drones on the market today by monitoring and analyzing their electronic signals to gain critical information."[4]

Shymanskyy claimed that because DJI has allegedly limited AeroScope for the Ukrainian army, the Russian military has the technical capabilities to track Ukrainian DJI drone operators, while the Ukrainian army cannot track Russian drone operators, giving "a significant air reconnaissance edge to Russian invaders."[5] DJI North America responded to these claims by stating that they were false, and further explained that DJI is "aware of the problems with some AeroScope units in Ukraine" and attributed the issue to "prolonged loss of power/internet" rather than "deliberate action to downgrade AeroScope" in Ukraine.[6]

TWO SESSIONS

From March 4–11, the PRC held its "two sessions"—an annual event during which the National People's Congress (NPC) and the Chinese People's Political Consultative Conference (CPPCC) conduct concurrent sessions. At the meetings, thousands of delegates discuss a wide array of topics related to the PRC's economic development, governance, and international relations. Selected tech executives attend the NPC and CPPCC sessions—the latter body being intentionally designed to include delegates from a diversity of social and political strata in the PRC as part of the Chinese Communist Party's (CCP) "united front" work.[7] Although major political decisions in the PRC are generally made during high-level meetings of the CCP in the fall preceding the two sessions, the highly scripted meetings are often viewed as a way to "take the temperature" of the PRC's political class.[8]

Premier Li Keqiang discusses AI in the context of the digital economy in PRC government report. In line with previous iterations of the "two sessions," PRC Premier Li Keqiang delivered the annual government work report (see full text from PRC government website in Chinese here and from Xinhua in English here).[9] The work report typically covers a broad range of government achievements over the previous year and goals for the future. Although an in-depth discussion on AI was not expected in this speech, Premier Li mentioned AI in relation to the development of the PRC's digital economy. He advocated for the development of "smart cities and digital villages" and the expansion of digital industries, such as AI. He further discussed smart manufacturing as an important factor in enhancing the core competitiveness of the

PRC's manufacturing industry and encouraged local government spending on "green and smart home appliances" in rural areas to stimulate domestic consumption.

Of note, the other anticipated work report of the "two sessions," the NPC Work Report (see in Chinese here), discussed the importance of science and technology innovation, but did not make specific reference to AI technologies, only broadly stating the importance of strengthening the "digitization, informatization, and intelligentization" for aspects related to the NPC's own work.[10]

Political and tech leaders make policy suggestions for autonomous vehicles, green AI, the metaverse, and drones. Some suggestions made by CPCC delegates include:

A more favorable policy environment for autonomous vehicles: According to the Shanghai-based *Observer*, Baidu CEO Robin Li, who attended the CPPCC, suggested removing bottlenecks in the policy environment for autonomous vehicles with a three-part plan that would: 1) allow driverless vehicles to operate on the road without safety officers and create pilot areas that allow driverless vehicles to carry passengers; 2) revise and implement the Road Traffic Safety Law to set a legal foundation for driverless vehicles; and 3) build an intelligent transportation infrastructure, take full advantage of remote control capabilities enabled by 5G, and improve traffic efficiency and safety through vehicle-road coordination.[11]

Procuring energy-efficient chips to enable Green AI: According to a statement provided to the *Global Times*, Baidu CEO Robin Li called for an "accelerated push" toward "green AI," emphasizing the need for energy-efficient AI chips.[12] Green AI refers to the "use of green power and algorithms to enable improved energy efficiency and reduced carbon emissions from data centers." To realize green AI, Li stated that businesses would need to be guided toward research and procurement of energy-efficient AI chips, thereby aligning better with green algorithms.

Advocating for central government leadership over the "Chinese metaverse": According to the *South China Morning Post*, Liu Wei, a CPPCC delegate and president of the Guangzhou-based AI services company PCI Technology Group, stated that "the government should lead the creation of the 'Chinese metaverse' digital economy."[13] Liu added that the metaverse could help digitize industries hurt by COVID-19, such as tourism, and assist with the rollout of the PRC's digital yuan. Although some delegates expressed optimism about the metaverse, others cautioned about the risks it could bring. NPC delegate Tencent CEO Ma Huateng warned that the rise of the metaverse, non-fungible tokens, and Web3 "have brought new risks to finance, technology and social governance at a time when the virtual and physical worlds are merging."

Proposing a law to govern UAVs in China: According to Shanghai-based *The Paper*, Shao Zhiqing, delegate to the NPC and member of the Party Central Committee of the China Zhi Gong Party (China Public Interest Party), one of PRC's eight minor political parties, proposed a UAV flight management law.[14] Currently no law exists that addresses drone flight issues in the PRC, although in 2018 the "Interim Regulations on the Management of Unmanned Aircraft Flights" was released for comment. Shao's proposal for the law included several suggestions, including clarifying the responsibilities of relevant government departments regarding drone flight operations and the drone industry; refined classification, supervision, and certification of drones on the market; registration of civilian drones that exceed a certain weight with public security; an application and approval system for drone flight to ensure airspace safety; and requiring the certification and training of owners flying drones over a certain weight.

UNMANNED SYSTEMS

New UAV sets a record for "the longest endurance of its kind in China." *China Daily* reported that the Qing Ou 30 UAV, or "Blue Seagull 30," the first PRC-developed fixed wing drone capable of vertical takeoff and landing, made its maiden flight in February.[15] The UAV can fly up to 800 kilometers in nine hours at speeds of up to 90 km/hour and has a maximum takeoff weight of 30 kilograms. The Qing Ou 30 was built by the Chongqing Research Institute, a collaboration between China's elite Harbin Institute of Technology and an administrative district of the Chongqing municipal government.[16] The director of the Chongqing Research Institute, Qin Jiang, emphasized that the use of hydrogen-powered batteries instead of traditional lithium batteries helps contribute to the endurance of the UAV.[17] A video of the maiden flight of the UAV, held in January in Chongqing, is available on Xinhua News.

Technology firms from China and Saudi Arabia announce a joint venture, Aerial Solutions, and cooperation agreements to produce UAVs. PRC state-owned enterprise and leading military electronics manufacturer China Electronics Technology Group Corporation (CETC) and Saudi Arabia-based company Advanced Communications and Electronics Systems (ACES) signed an agreement to manufacture UAVs through a joint venture during the World Defense Show, held in Riyadh from 6-9 March.[18] The joint venture, called Aerial Solutions, will manufacture UAV systems that "include communications, flight-control, camera, radar and wireless-detection systems." Aerial Solutions will also include a CETC-sponsored research and development center. CCP-affiliated news website *China Xiaokang* also reported that PRC-based Zhongshan Fukun Aviation Technology Company—a company founded in 2018 that focuses on UAVs, flight control systems, and AI products[19]—signed a "strategic cooperation agreement" to carry out in-depth cooperation in the field of industrial drones with both ACES and Aerial Solutions.[20]

INDUSTRY

Hikvision is reportedly seeking a second-hand ASML machine for chip production. According to the *South China Morning Post*, surveillance camera giant and PRC-designated national "AI champion" Hangzhou Hikvision Digital Technology is seeking to purchase a second-hand lithography machine for computer chip production known as extreme ultraviolet lithography (EUV) made by the Dutch firm ASML Holdings.[21] According to the report, "Hikvision's pursuit of a second-hand ASML machine to kick-start its own chip production reflects lingering uncertainties in the global semiconductor supply chain amid new Covid-19 outbreaks in China, heightened tensions between Beijing and Washington, and the potential impact of the war in Ukraine on international trade."

ASML is Europe's largest technology company by market capitalization and is the global leader in lithography systems for the production of advanced computer chips, reportedly occupying 80 to 85 percent of the market. When it comes to EUV—the most advanced type of chipmaking lithography machine—ASML's market share is 100 percent. Currently, only a few companies, including Intel, Samsung, and TSMC, are able to produce the most advanced chips using ASML's technologies. In 2020, the Trump Administration successfully lobbied the Dutch government to prevent the sale of EUV systems to PRC companies.[22]

Hikvision has denied that it is seeking to make the acquisition.

RESEARCH AND DEVELOPMENT

Medical team implants an AI chip into a patient's brain to control epilepsy as part of a clinical trial. A medical team from Xuanwu Hospital in Beijing successfully implanted an AI chip into the brain of a patient diagnosed with bilateral temporal lobe epilepsy. [23] The "closed-loop brain-computer interface neurostimulation system" prevents seizures by monitoring the patient's brain waves and producing an electrical signal at the onset of a seizure to regulate brainwave activity. According to reports, this was the first successful phase 3 clinical implantation for a procedure of this kind in China. However, the clinical trial is not necessarily novel. Researchers from Thomas Jefferson University Hospital in Philadelphia conducted similar trials in 2007.[24]

NOTES

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