Wings Along the BRI

Exporting Chinese UCAVs and Security?

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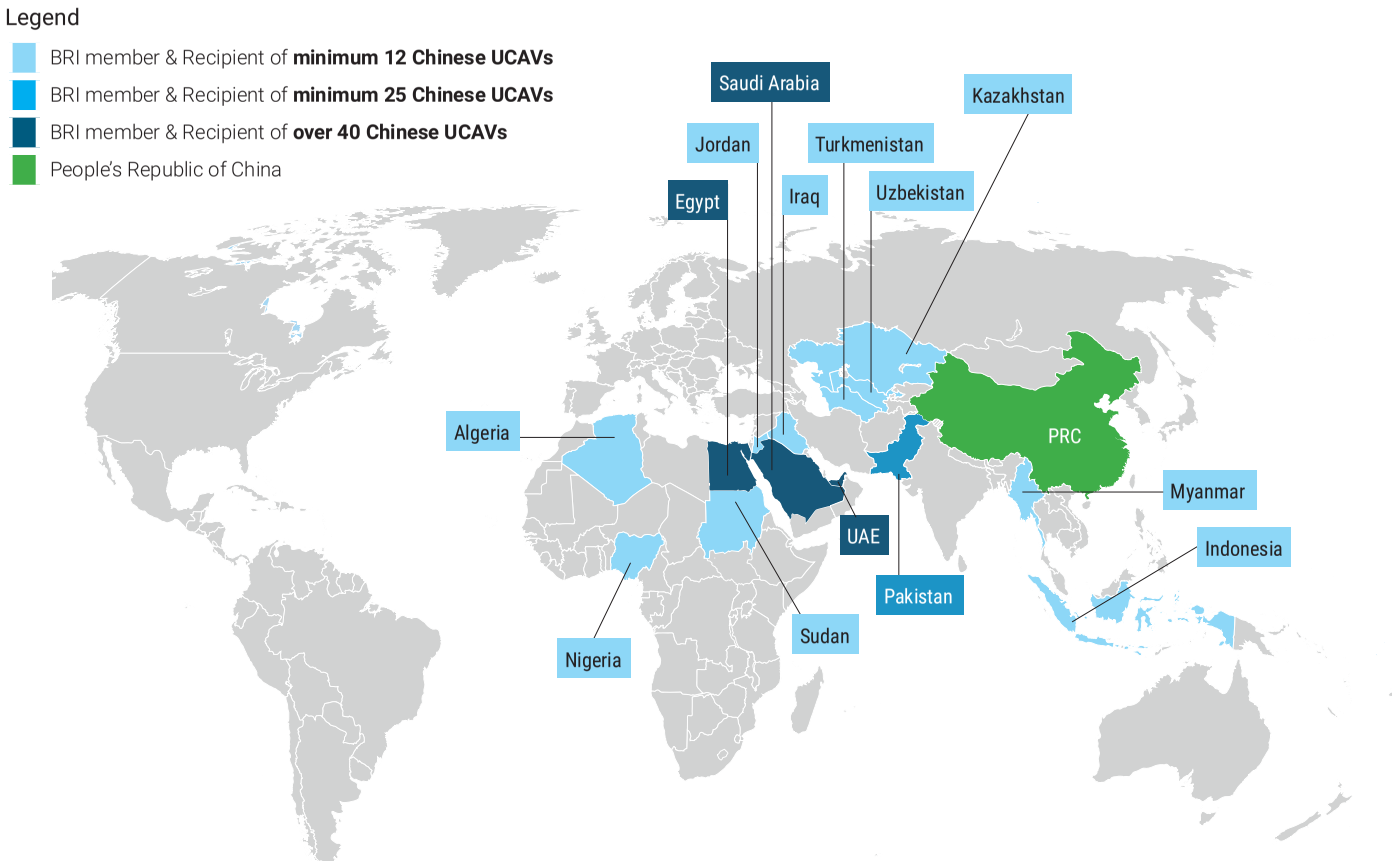
Announced by President Xi Jinping in 2013, the Belt and Road Initiative (BRI) has gradually come to assume the status as China's flagship global development strategy. While Beijing stresses the peaceful developmentalist dimension of the initiative, analysts have alluded to the potential geopolitical agenda behind this multi-sectoral effort that has been expanded to China's grand periphery, including vast parts of Latin America, the Middle East and Africa.[1] As Chinese capital increasingly penetrates markets in the Global South, policy makers in Beijing have realised the need to ensure security of Chinese citizens and entities abroad. In the meantime, China has become a leading international arms exporter. Data from the Stockholm International Peace Research Institute (SIPRI) suggests that Chinese defence companies are among the largest globally, making China the second-largest arms producer behind the United States and ahead of Russia.[2] These structural changes are driven by two simultaneous processes: (a) an increase in demand from countries along the BRI, particularly in the Middle East and Africa, which endeavour to modernise their defence capabilities; and (b) changes in supply, as Chinese companies are increasingly exporting high technology weapons systems abroad.[3] One noticeable trend relates to the export of Unmanned Aerial Vehicles (UAVs).[4] As will become evident, UAVs have been part of an attempt to develop and consolidate diplomatic relationships with recipient states, resulting in a strategic disadvantage for established Western players, including the United States.[5]

This Strategic Update investigates the diplomatic and security implications of China's outward expanding defence industry by focusing particularly on the case of Unmanned Combat Aerial Vehicles (UCAVs), which can be used for military and security purposes. This gives insight into the implications of China's modernising defence industrial base for international arms transfers and security along the BRI, a topic of immense future relevance. The latest SIPRI data was triangulated with expert opinions and available literature.[6] The first section contextualises a more outward facing Chinese defence industry amidst the BRI and growing bilateral security engagement. It reflects on the geopolitical significance of these developments in the context of China-US competition. The second section focuses on operationalisation and explains the security implications and reliability issues of Chinese equipment.

Going Out, Flying High



BRI member & Recipient of Chinese Drones[7]	BRI member	# of Drones
Algeria	Yes	10
Egypt	Yes	60
Indonesia	Yes	8
Iraq	Yes	12
Jordan	Yes	6
Kazakhstan	Yes	3
Myanmar	Yes	12
Nigeria	Yes	5
Pakistan	Yes	25
Saudi Arabia	Yes	70
Sudan	Yes	10
Turkmenistan	Yes	4
UAE	Yes	40
Unknown Recipient	N/A	2
Uzbekistan	Yes	5

As becomes evident from the visualisation on the opposite page, export patterns of Chinese UCAVs reflect a turn towards the Middle East and Africa. These developments should be interpreted against the evolution of the Chinese defence industry and policy changes under President Xi Jinping. China's defence industry has been affected by the general drive towards market reforms in China since 1978, characterised by selective policy decentralisation and sectoral consolidation. Nonetheless, Chinese state-owned enterprises (SOEs) remain central players and exports are reportedly key for the profitability of the sector.[8] Three SOEs are central actors in the production and export of UCAVs:

Table showing relevant SOEs.[9]

Company	Primary military goods and services
Aviation Industry Corporation of China (AVIC)	Aircraft and avionics
China Aerospace Science and Industry Corporation (CASIC)	Missiles and space systems
China Aerospace Science and Technology Corporation (CASC)	Missiles, space systems and unmanned aerial vehicles

The pursuit of high-tech defence equipment connects to the modernisation of China's defence-industrial base and the desire to achieve a competitive advantage in the UAV industry. It helps achieve the goals outlined in the Chinese industrial strategy, *Made in China 2025*, which aims to shift China's economic output value and become a world leader in high-tech manufacturing. UAV's are further a focus area in the State Council's 2017 "Next Generation Artificial Intelligence (AI) Development Plan".[10] This exemplifies the close connection between national and international commercial and political aims in the evolution of China's defence industrial base: a clear demand in Africa and the Middle East strengthens China's domestic UAV industries, whilst securing economic and political dividends from these sales as will become evident below.

In China, the lines between state-involvement and commercial incentive are often blurred, as shown through an analysis of CASC's relationship to the Chinese Communist Party (CCP). CASC is one of the largest drone manufacturing SOEs that have seen a growing demand for their UCAV exports. In line with their corporate purpose of giving priority to "…national interests, to be human-oriented, to win credit with quality, to get stronger through innovation", CASC has close political relations to the highest echelons of Chinese leadership.[11] Throughout the operating history of CASC, there has been much commendation from the highest echelons of CCP leadership, including former General Secretary Hu Jintao. Dating back to 1999, successive CCP leaders have openly embraced the role that CASC plays in expanding China's power and dreams in the aerospace industry.[12]

The rise of Ma Xingru, promoted to General Manager of CASC in September 2007 and elevated to the 18th CCP Central Committee in 2012, is indicative of the industry's strategic importance.[13] Xingrui's successor, Wu Yangsheng has previously argued for greater military-civilian integration, a focus area of military and defence reform under Xi Jinping.

The connection to China's defence modernisation is consequently not far off. Xi Jinping himself argued in 2016 that UAVs are key actors in modern battlefields.[14] China's 2019 Defence White Paper thus outlines "… the prevailing trend to develop long-range precision, intelligent, stealthy or unmanned weaponry and equipment" and puts it in the context of the evolution towards "… informationised warfare…".[15] In line with this in October 2019, UCAVs were a highlight at the National Day parade in celebration of the 70th anniversary of the PRC's founding.[16] Domestically, Chinese authorities have used UAVs for a range of purposes. UAVs from CASC conducted surveillance missions as part of alleged anti-terrorism campaigns in Xinjiang.[17] During the recent COVID-19 outbreak in Wuhan, drones delivered medical samples and quarantine materials to hospitals and patients within the city.[18] They were further used to enforce quarantine measures, although crowd-management through UAVs is in its infancy and faces regulatory hurdles.[19]

Internationally, the above developments coincide with foreign policy and diplomatic objectives under Xi Jinping in the context of growing engagement in security relationships and the expansion of the BRI and People's Liberation Army (PLA) activities. Working within a more nuanced interpretation of the principle of non-interference, a cornerstone of China's diplomacy, Beijing has started to foster defence and security relationships in Africa and the Middle East. The key drivers of this engagement relate to Beijing's interests to protect Chinese citizens and overseas investments in potentially volatile markets, and potentially consolidate diplomatic relationships. The events in the table on the next page illustrate how overseas experiences have shaped Beijing's awareness and perception of risk, coinciding with policy changes that manifest a more active defence diplomacy. Evacuation missions in Libya and Yemen, and experiences of risk to Chinese nationals and investments in South Sudan and Mali epitomise the need

"Beijing has started to foster defence and security relationships in Africa and the Middle East. The key drivers of this engagement relate to Beijing's interests to protect Chinese citizens and overseas investments in potentially volatile markets, and potentially consolidate diplomatic relationships."

to mitigate security challenges along the BRI. The emphasis on closer cooperation in security and defence matters is reflected in the Forum of China-Africa Cooperation (FOCAC). Security was formally introduced in 2012 and gradually expanded since then. The 2018-2021 FOCAC Action Plan outlines scope for security cooperation along the BRI, including intelligence and technology sharing, and capacity building of local security personnel to safeguard Chinese investments and citizens. 50 security assistance programs were announced alongside a pledge to strengthen defence and military cooperation and training.[20] The ensuing China-Africa Defence and Security Forum in 2018[21] and Peace and Security Forum in 2019[22] took place in Beijing and invited defence ministers and officials from all over Africa to discuss the deepening of cooperation in these areas.

These initiatives reflect a more concerted peripheral diplomacy under Xi Jinping. Diplomatic visits of senior PLA officials to neighboring countries even before the 2013 and 2014 fora emphasised the importance of creating stability. This included Vietnam, Myanmar, Nepal, Singapore, Indonesia, Philippines, the DPRK, Pakistan, and India.[23] As evident in the export data above, these political motivations coincide with the increase in UAV transfers. More assertive diplomacy under Xi Jinping has enabled a more outward facing Chinese defence industry, yielding a growing willingness in Beijing to foster defence and security cooperation along the BRI. This suggests that commercial incentives and political-diplomatic rewards are not necessarily opposed to each other, as the following examples highlight.

Overview of key events.

Overseas Evacuations	The Chinese government evacuated approximately 36,000 Chinese citizens amidst civil unrest from Libya in 2011[24] and several hundred citizens from Yemen in 2015[25]
FOCAC 2012	Security formalised as part of the China-Africa relationship
Work Forum on Peripheral Diplomacy 2013 and the Central Conference on Foreign Affairs 2014	New type of peripheral diplomacy under Xi Jinping expanding diplomatic activities towards the West
FOCAC 2018	Security umbrella broadened, defence cooperation consolidated
Defence and Security Forum 2018 and Peace and Security Forum 2019	Defence cooperation between China and Africa is institutionalised

Commercial Opportunities, Political Dividends

Overview of UCAVs, respective SOEs that manufacture them, specifications.[26]

UCAV Model	Year	Recipient (amount ordered and year ordered)	Company	Description
CH-1 (Chang Hong-1)	2010	Unknown Recipient (2, 2003)	CASC	■ Max altitude: 3,000 meters ■ Max payload: 4.5kg ■ Max range: 740 km
CH-3 (Chang Hong-3)	2012	Algeria (5, 2017) Myanmar (12, 2013), Nigeria (5, 2014), Pakistan (5, 2015), Sudan (5, 2014) & Turkmenistan (2, 2015)	CASC	■ Max altitude: 4,000 meters ■ Max payload: 180kg ■ Max range: 960km
CH-4 (Chang Hong-4)	2014	Algeria (5, 2017), Indonesia (8, 2017), Iraq (12, 2014), Jordan (6, 2015), Saudi Arabia (5, 2014) & Sudan (5, 2015)	CASC	■ Max altitude: 5,000 meters ■ Max payload: 345kg ■ Max range: 5000 km
CH-5 (Chang Hong-5)	2015	None to date	CASC	■ Max altitude: 7,000m ■ Max payload: 1,200 kg ■ Max range: 2000km
ASN 209	2012	Egypt (18, 2010)	CASIC	■ Max altitude: 5,000 meters ■ Max payload: 50 kg ■ Max range: 200 km
WJ-600	2010s	Turkmenistan (2, 2015)	CASIC	■ Max altitude: 10,000 meters ■ Max payload: 600 kg ■ Max range: 2,100 km
Wing Loong-1	2011	Egypt (10, 2016), Kazakhstan (3, 2015), Pakistan (5, 2015), Saudi Arabia (15, 2014), UAE (25, 2011) & Uzbekistan (5, 2013)	AVIC	■ Max altitude: 8,000 meters ■ Max payload: 200 kg ■ Max range: 4,000 km
Wing Loong-2	2017	Egypt (32, 2018), Saudi Arabia (50, 2017) & UAE (15, 2017)	AVIC	■ Max altitude: 9,900 meters ■ Max payload: 400 kg ■ Max range: 1,500 km

In comparison to other major drone-producing countries, namely the United States, Israel and Russia, Chinese drones are generally slower, fly at lower altitudes and deliver a lower payload than their competitors. However, they fly almost twice as long and are much cheaper. For instance, the CH-5 costs half as much as the American MQ-9 Reaper and the CH-4 can go for even lower: 75% of the American MQ-9.[27] There have been reliability issues with earlier models of Chinese UCAVs. For instance, in 2016, the Jordanian Royal Air Force (JRAF) acquired six CH-4B drones. Three years later in July 2019, the JRAF put all six up for sale, citing "performance" issues.[28] Earlier, Algeria had decided not to purchase the CH-4, given that two of the drones crashed during evaluation flights in 2013 and 2014. Furthermore, according to a recent US government report, Iraq only has one operational CH-4B drone out of a fleet of "more than 10".[29] However, UCAVs such as the Wing Loong-II, developed in 2017, and the CH-5, developed in 2018, demonstrate growing technological sophistication while maintaining a favourable price tag for foreign militaries.[30]

Case Study: CASC & Saudi Arabia

The precise connections between commercial actors (SOEs), their activities abroad, and Beijing's foreign policy goals remain difficult to pin down. Analysts note that the export of arms requires official approval, that the state may support SOEs in securing contracts abroad, and that arms may be part of bilateral security assistance.[31] A case-by-case approach nonetheless reveals the central position of defence SOEs and UCAVs exports in the consolidating diplomatic relationships and economic interests along the BRI. In order to overcome limitations of the principle of non-interference and mitigate potential security challenges outlined above, China has engaged in capacity building in security sectors along the BRI.[32] Such defence-industrial cooperation aims to enhance recipient countries' defence capabilities through arms transfers and training, combining commercial and political objectives.[33] It meets the rising demand from countries that want to modernise their defence capabilities, particularly in the intelligence, surveillance and reconnaissance aircraft sector.[34]

For instance, CASC produces the CH-4 UCAV in a factory opened in Saudi Arabia. The factory is part of a larger package deal signed in Beijing during a meeting between Xi Jinping and Saudi Arabia's King Salman. The deal, which was reportedly concluded at the International Defence Exhibition and Conference in Abu Dhabi in February 2017, is believed to have involved the state-owned Saudi Technology Development and Investment Company (TAQNIA) and China's state-owned Aerospace Long-March International Trade (ALIT), which exports defence and anti-terrorism equipment and is a subsidiary of CASC.[35] It also formed part of a broader agreement, with the two countries deciding to develop oil refineries and co-operate on China's Chang E-4 moon mission.[36] The export of UCAVs thus reflects the coming together of commercial opportunism and diplomatic dividends.

This contributes to the perception of the growing geopolitical competition in defence cooperation and exports. The above affirms that UCAV exports represent a broader effort to fill the void of arms sales left by alternative suppliers such as the United States. Despite being important US trading partners, Saudi Arabia and Egypt have given preference to the cheaper and more readily available Chinese UCAVs—as the CH-4 can cost 75% less than the American MQ-9 Reaper drone, providing cash-strapped countries a more attractive option to upgrade their arsenal. Saudi Arabia has imported 70 Chinese UCAVs compared to none from the U.S., and Egypt has imported 60 Chinese UCAVs since 2010, compared to 112 U.S. drones, the last of which was ordered in 1985. The UAE is the sole exception to this UCAV export trend, having imported ten American RQ-1 Predator drones in 2017.

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In addition to offering more preferable prices, Beijing also benefits from skirting the international regulations that restrict Washington’s ability to compete. One such obstacle for the US is the Missile Technology Control Regime (MTCR), established in 1987, which aims to limit the proliferation of missiles that are able to carry WMDs—including UCAVs, as they can carry such equipment and have a range of over 300km.[37] However, Beijing is not party to it. Having recognised the serious challenge the treaty poses for strengthening partnerships and holding off China’s military advance, in 2018 the Trump administration announced a new policy intended to loosen export restrictions on armed drones.[38] However, there has been little evidence so far that this will succeed in reversing the China-oriented trends.[39]

Influencing the Battlefield

Lastly, the proliferation of Chinese UCAVs is starting to have an impact on battlefields in the Middle East and Africa. Reports have shown that the Nigerian Air Force has utilised the armed CH-3 drone, which has been in their inventory at least since 2014, against insurgent groups. In February 2016, the Nigerian Air Force reportedly used the CH-3 drone in order to destroy a Boko Haram logistics base in Sambisa forest.[40] In April 2018, the Saudi military fired a Chinese Blue Arrow-7 laser-guided missile from a Wing Loong-II UCAV to assassinate Houthi rebel leader Saleh Ali al-Sammad.[41] Egypt has also used Wing Loong-IIs to fight against militants in northern Sinai.[42] Chinese UCAVs are thus beginning to have an impact on Middle Eastern and African security sectors.

Overall, the growing exports of Chinese UAVs should be interpreted in the wider context of domestic and diplomatic developments over the last decade. SOEs are central players in China's industrial policy and domestic defence modernisation. In the context of the two windows of opportunity outlined here, the commercial interests of China's SOEs and their expansion along the BRI coincide with growing diplomatic and security cooperation on the part of the Chinese government. The combination of both trade and investment provides ample rationale for providing drones in addition to other weaponry – all with increased ties to the Chinese military and defence industry.[43] Seen in the context of Xi Jinping's goal to consolidate China's position internationally, this helps to bolster China's image with all the necessary great power credentials. In the larger context of geopolitical competition between China and the US, UCAVs thus symbolise the potential strategic dividend of defence cooperation and arms transfers along the BRI: a significant trend that analysts should not neglect. ■

Endnotes

1 Henceforth, China refers to the People's Republic of China (PRC).

2 SIPRI (2020) "New SIPRI data reveals scale of Chinese arms industry". Available online: https://www.sipri.org/media/press-release/2020/new-sipri-data-reveals-scale-chinese-arms-industry (accessed 25 March 2020).

3 Waldron, G. (2019) "China finds its UAV export sweet spot". Available online: https://www.flightglobal.com/military-uavs/china-finds-its-uav-export-sweet-spot/132557.article (Accessed 25 March 2020).; Boutin, K. (2018) "Feeding the Lion: China and defence development in African states", *Defense & Security Analysis*, 34(3), pp. 231-6.

4 China Power Team (2020) "Is China at the forefront of drone technology?" *China Power*. Available online: https://chinapower.csis.org/china-drones-unmanned-technology/ (accessed 25 March 2020).; Romaniuk, S. N. and Burgers, T. (2020) "China's Drone Selling and Its Consequence on the Security Level", *ISPI*. Available online: https://www.ispionline.it/it/pubblicazione/chinas-drone-selling-and-its-consequence-security-level-25313 (accessed 25 March 2020).

5 Horowitz, M. C. and Schwartz, J.A. (2020) "A new U.S. policy makes it (somewhat) easier to export drones", *Washington Post*. Available online: https://www.washingtonpost.com/news/monkey-cage/wp/2018/04/20/a-new-u-s-policy-makes-it-somewhat-easier-to-export-drones/ (accessed 25 March 2020).

6 SIPRI Data was interpreted in accordance with their methodological guidelines: SIPRI (2020) "Sources and Methods". Available online: https://www.sipri.org/databases/armstransfers/sources-and-methods (accessed 25 March 2020).

7 Data was derived from the Stockholm International Peace Research Institute (SIPRI) arms transfer database. Available online: http://armstrade.sipri.org/armstrade/page/trade_register.php

8 Hille, K. (2018) "China's drone makers zero in on armed forces", *Financial Times*. Available online: https://www.ft.com/content/4f427fa2-e284-11e8-a6e5-792428919cee (accessed 25 March 2020).; Boutin, K. (2017) "Defence Technology and Industrial Base", in Bitzinger and Popescu (eds.) *Defence industries in Russia and China: players and strategies*. Paris: EU Institute for Security Studies, pp. 39-45.

9 Tian, N. and Su, F. (2020) "Estimating the Arms Sales of Chinese Companies". Available online: https://www.sipri.org/publications/2020/sipri-insights-peace-and-security/estimating-arms-sales-chinese-companies (accessed 25 March 2020).

10 Zhang, Z. (2019) "AI development plan draws map for innovation", *China Daily*. Available online: https://www.chinadaily.com.cn/a/201908/05/WS5d476b48a310cf3e35563d0d.html (accessed 25 March 2020).

11 China Aerospace Science and Technology Corporation (2020) "Corporate Culture". Available online: http://english.spacechina.com/n16421/n17138/n2357700/index.html (accessed 2u5 March 2020).

12 China Aerospace Science and Technology Corporation (2020) "Three Spirits of Aerospace" (航天三大精神). Available online: http://www.spacechina.com/n25/n142/n154/n178/index.html (accessed 25 March 2020).

13 China Vitae (2020) "Ma Xingrui". Available online: http://www.chinavitae.com/biography/Ma_Xingrui (accessed 25 March 2020).

14 Puzhong, O. and Hao, X. S. (2016) "President Xi Jinping meets with representatives from some grass-roots units and the frontline army of teaching and research" (Xíjìnpíng zhǔxí jiējiàn bùfèn jīcéng bùduì hé jiàoxué kēyán yīxiàn jūnduì réndà dàibiǎo). Available online: http://www.81.cn/jmywyl/2016-03/14/content_6959927.htm (accessed 25 March 2020).

15 Xinhua (2019) "China's National Defense in the New Era". Available online: http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm (accessed 25 March 2020).

16 China Military (2019): "Chinese military commissions GJ-11 stealth attack drone". Available online: http://eng.chinamil.com.cn/view/2019-10/01/content_9641923.htm (accessed 25 March 2020).

17 Yan, L. (2014) "UAVs used to locate suspects in Xinjiang anti-terrorism campaign", *Global Times*. Available online: http://www.ecns.cn/2014/08-18/130005.shtml (accessed 25 march 2020).

18 Yang, J. and Reuter, T. (2020) "3 ways China is using drones to fight coronavirus", *World Economic Forum*. Available online: https://www.weforum.org/agenda/2020/03/three-ways-china-is-using-drones-to-fight-coronavirus/ (accessed 25 March 2020).

19 Global Times (2020), *Twitter*. Available online: https://twitter.com/globaltimesnews/status/1223218977570078721?s=20M (accessed 25 March 2020).

20 Ministry of Foreign Affairs of the People's Republic of China (2018) "Forum on China-Africa Cooperation Beijing Action Plan (2019-2021)". Available online: https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1593683.shtml (accessed 25 March 2020).

21 Zheng, Y. (2018) "First China-Africa Defense and Security Forum concludes", *CGTN*. Available online: https://news.cgtn.com/news/3d3d514f31457a4e78457a6333566d54/share_p.html (accessed 25 March 2020).

22 Chen, L., Peng, K., Sun, Q. and Zhang, X. (2019) "Feature: Overview of 1st China-Africa Peace and Security Forum". Available online: http://eng.chinamil.com.cn/view/2019-07/17/content_9560795.htm (accessed 25 March 2020).

23 Swaine, M. D. (2014) "Chinese Views and Commentary on Periphery Diplomacy", *China Leadership Monitor No. 44*, p. 15. Available online: https://carnegieendowment.org/files/clm44ms.pdf (accessed 25 March 2020).

24 China Daily. (2011) "29000 nationals pulled out of Libya". Available online: https://www.chinadaily.com.cn/china/2011-02/28/content_12090820.htm (accessed 25 March 2020).

Shi, J. (2011) "Lessons to learn from Libyan evacuation", *SCMP*. Available online: https://www.scmp.com/article/739925/lessons-learn-libyan-evacuation (accessed 25 March 2020).

25 Zhang, Y. (2015) "Over 500 Chinese nationals evacuated from Yemen", *China Daily*. Available online: http://www.chinadaily.com.cn/china/2015-03/30/content_19953138.htm (accessed 25 March 2020).

26 "Chinese Drone Aircraft." Accessed March 20, 2020. https://www.militaryfactory.com/aircraft/chinese-military-drone-aircraft.asp. ,

"Unmanned Aerial Vehicles (UAVs) - Chinese Intelligence Systems." Accessed March 20, 2020. https://www.globalsecurity.org/military/world/china/uav.htm. & China Power Team (2020) "Is China".

27 China Power Team (2020) "Is China".

28 Reim, G. (2019) "Jordan military tries to sell off 'knock-off' Chinese drones", *Flight Global*. Available online: https://www.flightglobal.com/helicopters/jordan-military-tries-to-sell-off-knock-off-chinese-drones/132985.article (accessed 25 March 2020).

29 Trevithick J. (2019) "Only One Of Iraq's Chinese CH-4B Drones Is Mission Capable As Other Buyers Give Up On Them", *The Drive*. Available online: https://www.thedrive.com/the-war-zone/29324/only-one-of-iraqs-chinese-ch-4b-drones-is-mission-capable-as-other-buyers-give-up-on-them (accessed 25 March 2020).

30 Waldron, G. (2019) "China finds".

31 Boutin, K. (2018) "Feeding the", p. 241.

32 Benabdallah, L. (2019) "Contesting the international order by integrating it: the case of China's Belt and Road initiative", *Third World Quarterly*, 40(1), pp. 92-108.

33 Boutin, K. (2018) "Feeding the", p. 232.

34 Boutin, K. (2018) "Feeding the", p. 233.

35 Bloomberg Company Profile(2020) "Aerospace Long-March International Trade Co Ltd". Available online: https://www.bloomberg.com/profile/company/0778414D:CH (accessed 25 March 2020).; CASC (2020) "About CASC: Organization". Available online: http://english.spacechina.com/n16421/n17138/n2357690/index.html (accessed 25 March 2020).; Diamond, C. (2017) "China to open a drone factory in Saudi Arabia", *Defense News*. Available online: https://www.defensenews.com/air/2017/03/28/china-to-open-a-drone-factory-in-saudi-arabia/ (accessed 25 March 2020).; Chan, M. (2017) "Chinese drone factory in Saudi Arabia first in Middle East", *SCMP*. Available online: https://www.scmp.com/news/china/diplomacy-defence/article/2081869/chinese-drone-factory-saudi-arabia-first-middle-east (accessed 25 March 2020).

36 Middle East Eye (2017) "China's Saudi drone factory compensates for US ban". Available online: https://www.middleeasteye.net/fr/news/china-build-factory-saudi-arabia-fill-drone-shortage-1200657135 (accessed 25 March 2020).

37 Horowitz, M. C. and Schwartz, J.A. (2020) "A new".; Arms Control Association (2017) "The Missile Technology Control Regime at a Glance". Available online: https://www.armscontrol.org/factsheets/mtcr (accessed 25 March 2020).

38 Weinberger, S. (2018) China Has Already Won the Drone Wars, *Foreign Policy*. Available online: https://foreignpolicy.com/2018/05/10/china-trump-middle-east-drone-wars/ (accessed 25 March 2020).

39 Penney, H. (2020) "Modernizing UAV Export Policy for Effective Coalition Forces", *Air Force Magazine. Available online: https://www.airforcemag.com/article/modernizing-uav-export-policy-for-effective-coalition-forces/ (accessed 30 April 2020).*

40 Runsewe, O. (2016) "Nigeria adopts the 'drone war' approach in the fight against Boko Haram: Here are other modern warfare options they can take on", *Ventures Africa*. Available online: http://venturesafrica.com/nigeria-joins-the-drone-wars-in-its-fight-against-boko-haram-here-are-other-weapons-they-could-use/ (accessed 25 March 2020).

41 Roblin, S. (2019) "Chinese Drones Are Going to War All Over the Middle East and Africa", *The National Interest*. Available online: https://nationalinterest.org/blog/buzz/chinese-drones-are-going-war-all-over-middle-east-and-africa-74246 (accessed 25 March 2020).

42 Arabian Aerospace Online News Service (2019) "Egypt inducts armed Chinese drones". Available online: https://www.arabianaerospace.aero/egypt-inducts-armed-chinese-drones.html (accessed 25 March 2020).

43 Paulsson, H. (2018) "Explaining the Proliferation of China's Drones", *The Diplomat*. Available online. https://thediplomat.com/2018/11/explaining-the-proliferation-of-chinas-drones/ (accessed 25 March 2020).

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China's pursuit of military innovation has met a more active diplomacy along the Belt and Road Initiative (BRI). Filling the void left by traditional suppliers, Chinese Unmanned Combat Aerial Vehicles (UCAVs) have proliferated along the BRI and are starting to affect Middle Eastern and African security landscapes. This Strategic Update explains the drivers and implications of these developments in the context of China's modernising defence industrial base and more active role in security cooperation in the Global South.

Cover image:
CH-4 Unmanned Aerial Vehicle (UAV)
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