CHINA

China's Cyber Range Industry

Cyber.

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OE Watch Commentary

Cyber ranges have become more popular over the past few years for providing hands-on experience in cybersecurity training within a controlled environment, according to a recent article posted on *Weixin*, a mobile-based, social media platform on China's domestic network. According to the article, military units, business enterprises, universities, and research institutes are working to build medium- and small-scale network offensive and defensive simulation environments. They have also been conducting preliminary research on the key technologies and core equipment needed to operate national-level cyber ranges.

The article explains that from 2012-2015, China researched and developed a series of cyber range practice systems. After 2016, China's cyber ranges began moving out of the military sectors and into scientific research institutes. Eventually, the private market began manufacturing cyber ranges and developing commercial cyber range products, with national ministries and commissions, such as the Ministry of Industry and Information Technology, the Development and Reform Commission, and the Ministry of Science and Technology, guiding the industry.

Some of the research centers and institutes that have been involved in researching and developing cyber ranges include the CAS Institute of Information Technology, Beijing Institute of Technology, Beijing

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University of Posts and Telecommunications, National Industrial Information Security Development and Research Center, Sichuan University, and Pengcheng Laboratories. These, and others, according to the article, have constructed their own cyber ranges. The article explains that today China has a complete, initial supply chain for the

cyber ranges. Military-based cyber ranges are focusing on extending cyber operations to include electronic warfare, cyber security operations, psychological operations, electromagnetic spectrum, military deception, and operational security. Commercial cyber ranges focus more on "unknown threat analysis, security situation awareness, training of security skills, and security offensive and defensive drills."

The author describes China as still researching and developing cyber ranges due to rapid changing and advancing technologies, which need to be incorporated into the cyber range. With new technologies in cyber being introduced and cyber's broad application, according to the article, new-technology cyber weapons for attack and defense on the future cyber battlefield are the current prevailing trend in the industry. As a result, being able to successfully integrate new technologies into a cyber range is the key to their overall success and competitiveness.

Source: Tao Song, "网空靶场：从炒作到现实-2020 (Cyber Range: From Media Hype to Reality-2020)," *Weixin* (a mobile-based, social media platform on China's domestic network), 14 January 2021. https://mp.weixin.qq.com/s/zu2Je_A_x06k78tzrXyjbg

...From the perspective of R&D trend of military cyber ranges, the content of military cyber range construction focuses on the extension of cyber operations, including the comprehensive employment of EW, cyber security operations, psychological operations, electromagnetic spectrum, military deception, and operational security. Its range construction model and system focus on joint ranges, joint training, and exercises. From the perspective of R&D trend of commercial cyber ranges, the content of commercial cyber range construction focuses on unknown threat analysis, security situation awareness, training of security skills, and security offensive and defensive drills.

...Furthermore, with the continuous introduction of new technologies in cyber and its broader application, the prevailing trend is the use of new-technology cyber weapons for attack and defense on the future cyber battlefields. In a cyber range, how to keep integration with new technology is the key to realizing comprehensive capability for cyber ranges and to maintaining the ranges' own competitiveness.