

The long march into outer space

China's Xichang Satellite Launch Center (XSLC), built in the heat of the rivalry between China and the Soviet Union in the sixties, has hit the headlines this month. On February 12, the space station was used for launching two Beidou-3 satellites. By 2020, these 'eyes in the sky', as part of a 30-member family, will become operational, rivalling the U.S. Air Force's Global Positioning System (GPS).

Consequently, the Beidou Navigation Satellite System (BNSS) will provide another navigation option. Along with Russian Glonass and Europe's Galileo systems, it will assist users — in cars, ships and planes — to accurately reach their destinations in any part of the globe.

The launch of the satellites showcases the steely resolve of China to quickly stamp its authority on the international aerospace map.

Creating an indigenous facility

The idea of constructing the Xichang facility crystallised in the 1960s when relations between the two communist giants — China and the Soviet Union — soured badly. The Chinese were worried that because of the growing hostility between the two neighbours, their existing Inner Mongolia space launch facility in Jiuquan, not far from the Soviet border, had become vulnerable. Consequently, the XSLC was established in 1984 in the Sichuan province.

Despite the focus on their civilian applications, the Beidou navigation satellites also have a prominent military dimension. An article posted on the website of *Popular Science* points out that the BNSS embeds technology that will offer "super accurate guidance for munitions and drones". The latest Beidou satellites have highly accurate atomic clocks, which allow them to send precisely timed radio impulses, making real-time military targeting more accurate.

Chinese President Xi Jinping, during a February visit to Xichang station, reportedly said that he had "ordered the centre to focus on military training and research, boost space launch and combat capabilities and integrate itself with the People Liberation Army's (PLA's) joint operation system".

China's Belt and Road Initiative (BRI), a lunar probe, and the highly challenging construction of a space station are all revving up Beijing's frenzied drive into outer space.

"Throughout 2018, Long March-3A rockets will send 18 Beidou-3 satellites into space, enabling the Beidou system to provide navigation and positioning services to countries along the Belt and Road," says Cen Zheng, a top rocket system commander, as quoted by the state-run Xinhua news agency.

The decision to construct a space station has spurred the demand for heavy rockets that can carry enormous loads into space. Last April, China sent its first cargo module, Tianzhou-1, into space using a Long March-7 rocket. That seminal launch put China closer to establishing a space station around 2022.

The Chinese seemed to have narrowed down on Long March-7 rockets as the heavy-duty vehicle of choice for building the space station. The plans are only getting bigger. By 2030, China wants to perfect a heavy-lift carrier rocket, currently called Long March-9, according to the Science and Technology Committee of the China Academy of Launch Vehicle Technology. The Long March-9 rocket aspires to lift a jaw-dropping 100 tonnes of payload into space. "We will step up our efforts in the research and development of heavy lift carrier rockets so as to send them into space at an

earlier date,” said Huang Chunping, an aerospace expert.

Initiatives such as the Belt and Road and construction of a space station are driving China’s forays into outer space. The launch of Beidou-3 satellites is also in line with its space ambitions

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