



Beidou Navigation System Expansion Announced

OE Watch Commentary: China is continuing to expand its Beidou Navigation Satellite System, with 8-10 new satellites expected to be added to the existing constellation of 19 “Beidou-3” and 18 “Beidou-2.” The new satellites are being placed in Medium Earth Orbits between 20,000 and 24,000 km, similar to those commonly used by other navigation satellite systems including GPS, Galileo and Glonass. Five Beidou-2 satellites are in the much higher Geostationary orbits.

Chinese officials view the use of domestically produced microchips in Beidou satellites and receiver systems as a major milestone in the country’s push for technological self-reliance.

The accompanying excerpted article from *China Military Online* notes that Beidou has been widely adopted as an alternative to GPS and Galileo, particularly for industrial applications. Current users have access to position data accurate within 10 meters globally and within 5 meters in the Asia-Pacific region, though the Chinese military has access to a significantly more accurate encrypted signal from the system.

China hopes to leverage the system not only for military applications and foreign sales but also to help drive its own quest to develop advanced technologies such as internet of things, automation, and AI. An expanded system encompassing positioning, navigation and timing functions, planned for completion by 2035, will have direct application to these new technologies. **End OE Watch Commentary (Wood)**

“China plans to complete the construction of the BDS-3 global system and start to provide special services by 2020.”



北斗三号卫星 (Beidou 3rd Generation).

Source: Spr98 [CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0/>)], <https://commons.wikimedia.org/wiki/File:北斗三号卫星（1：3）.jpg>.

Source: “China to launch 8 to 10 Beidou navigation satellites this year,” *China Military Online*, 5 March 2019. http://eng.mod.gov.cn/news/2019-03/05/content_4837262.htm

According to the China Satellite Navigation Office, Beidou Navigation Satellite System (BDS) will continue high-density global deployment, launching 8 to 10 Beidou navigation satellites and complete all Medium Earth Orbit (MEO) satellites launch this year, in order to further improve the constellation layout across the world, and to comprehensively enhance the service performance of BDS and improve user experience.

Since the BDS-3 project completed the basic system and began to provide global services at the end of last year, the BDS has been operating steadily. Through global testing and evaluation, its global positioning accuracy is better than 10 meters and in the Asia-Pacific region, it is 5 meters, which both meet the index requirements.

After years of development, BDS has formed a complete industrial chain and achieved large-scale applications in China’s transportation, agriculture, public security, surveying and mapping industries, and other fields. This year, China will gradually increase the in-depth innovation and integration of BDS with emerging technologies such as the Internet, big data, and artificial intelligence (AI), with a view to promoting new integration application models and formats of the “Beidou +”.

According to statistics, the sales of basic products such as domestically-made Beidou navigation chip modules have exceed 700 million, and the sales of domestically-made high-precision board and antenna have accounted for 30% and 90% of the domestic market respectively as of the end of 2018...

At present, the BDS has been widely applied to various fields such as the confirmation of land rights in Indonesia, construction in Kuwait, land surveying and mapping in Uganda, precision agriculture in Myanmar, offshore drilling in Maldives, drones in Cambodia, warehousing and logistics in Thailand, airport timing services in Pakistan, and power inspection in Russia. The high-precision products of the BDS have been exported to more than 90 countries and regions, and the ground-based technology and product system of the BDS are also exported overseas...

China plans to complete the construction of the BDS-3 global system and start to provide special services by 2020. China will build a PNT (positioning navigation and timing) system, featuring wider application, greater integration, and higher intelligence with the BDS as the core by 2035. With stronger functions and better performance, the BDS will serve the world and benefit mankind