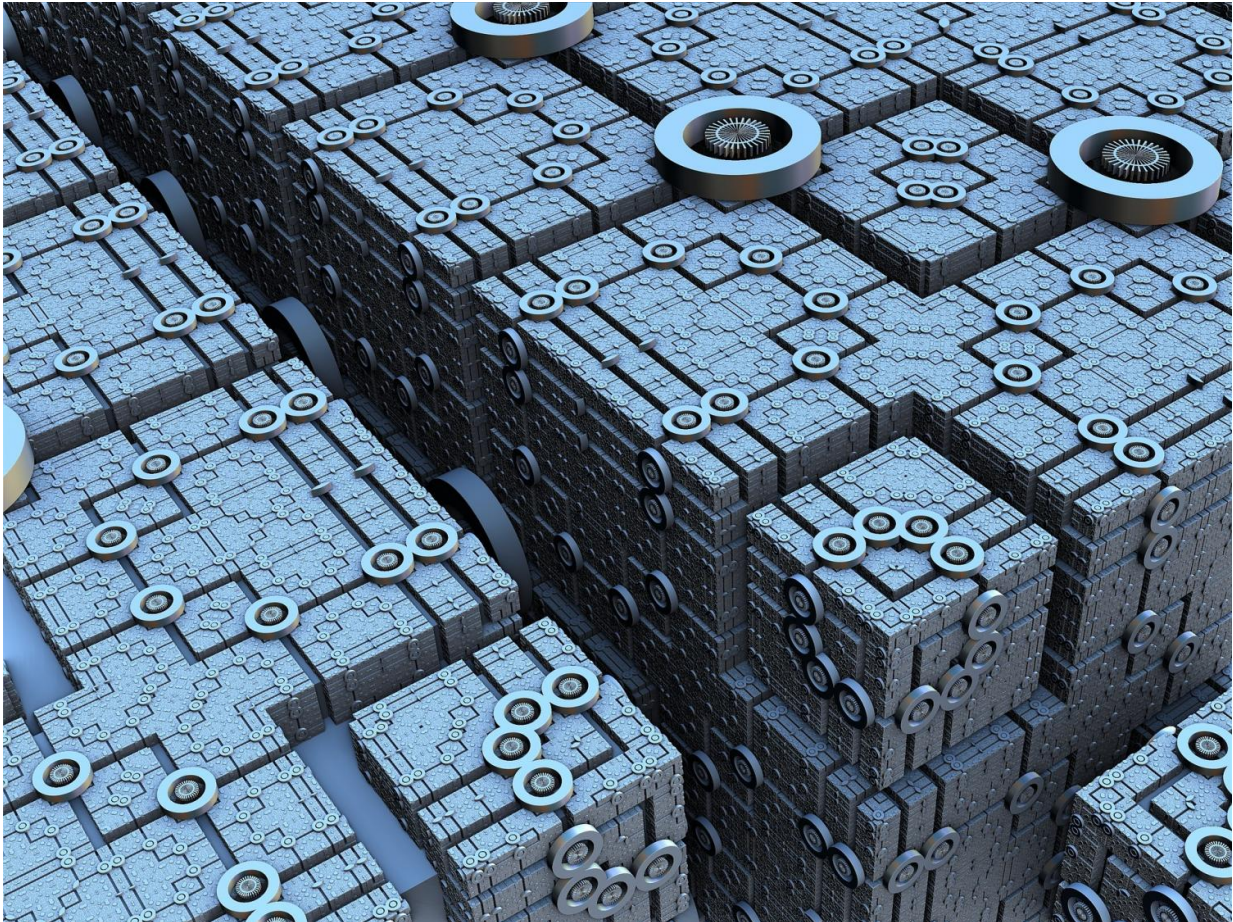


GPS, watch out. Here comes China's system

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COVID-19 may have left roads around the globe barren of cars, but it hasn't stopped China from claiming leadership over the world of navigation and digital mapping. Watch out, GPS.

Big plans are in the making. China has launched the final leg of its BeiDou Navigation Satellite system, or BDS, completing the build-out of a network that competes with America's ubiquitous Global Positioning System and Europe's Galileo. Regulators have effectively set a framework of standards for intelligent mobility, while separately committing to double down with [financial help](#) and incentives for companies that leverage these technologies. Ran Chengqi, director of China's Satellite Navigation Office, has said the country is set to build a supply chain of chips, modules, boards and other services for BeiDou.

As the U.S. puts up national security walls against Chinese companies and Beijing pushes ahead with self-sufficiency goals, the growing satellite network now stands to rival the U.S. version, which began as a military project in the 1970s and has essentially had a monopoly in the navigation and mapping field thus far. The systems are compatible with each other to some extent, meaning there's room for interoperability and eventual replacement. However, on certain metrics, the latest version of BeiDou is better: Its signals are accurate down to 0.41 meters versus GPS' 0.5 meters on average, according to Jefferies Financial Group Inc. analysts. China has said that 100% of the key components for the BDS-3 satellite are being domestically produced.

Whether China's system eventually becomes what GPS has been to the world for decades—used in everything from military targeting to unsnarling [traffic jams](#) to finding you a nearby Italian restaurant—is less important at this point than the fact that Beijing is focused on getting ahead and creating an ecosystem around it, including supply chains of manufacturers and service providers.

The real benefits of BDS could accrue to China's industrial complex. Stocks have surged in homegrown firms like Guangzhou Haige Communications Group Inc. and Beijing BDStar Navigation Co. that provide relevant products and services. Over the last five years, research

and development expenditure amounted to between 10% and 15% of the companies' revenues. The output value of the satellite navigation industry is expected to exceed 400 billion yuan (\$57 billion) this year. Several other companies that once made radio devices and walkie-talkies are now front-runners in the satellite communication space. That's brought down costs, allowing for wider application in logistics, farms and factories at a time when Beijing needs to boost efficiency and productivity to bolster growth.

Already, BeiDou—with 56 satellites—is perceived as "more advanced, and offers higher precision and sophisticated coverage" when compared to its U.S. and Russian rivals, which currently have 35 and 30 orbiters respectively, according to Jefferies. Regulators last week noted that chips that enable devices to tap the navigation system are being mass manufactured, with an output value of almost \$50 billion last year. The system is increasingly being utilized; more than 100 countries across Africa, Eastern Europe and Southeast Asia now employ it to some extent. Several Belt and Road participants are starting to use China's "Space Silk Road" for smart port and land charting, for example. At home, mapping services are employed in the machinery and automobile industries, and in taxis, trucks and fishing vessels. Can it go beyond this?

Sure, the U.S. system isn't standing still. Along with government bodies, defense companies like Raytheon Technologies Corp. and Lockheed Martin Corp. are constantly working on upgrades; billions of dollars are being put to work. Now, though, there's real competition.

Technology and potential aside, replacing GPS comes with another (big) hurdle: trust. Relying on any provider of location data in these increasingly protectionist times could be unsettling. Even if complaints about GPS becoming more outdated are frequent, will users across the world take to a system run by Beijing, no matter how accurate it is? Your guess is as good as mine.

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