Space and Counterspace. China's space activities and capabilities, including ASAT programs, have significant implications for anti-access/area-denial in Taiwan Strait contingencies and beyond. Many of China's non-military space programs, including the manned program and the planned space station, are run by the PLA.

Reconnaissance: China is deploying imagery, reconnaissance, and Earth resource systems with military utility. Examples include the Yaogan-1, -2, -3, -4, -5, and -6, the Haiyang-1B, the CBERS-2B satellite, and the Huanjing disaster/environmental monitoring satellite constellation. China is planning eight satellites in the Huanjing program that are capable of visible, infrared, multi-spectral, and synthetic aperture radar imaging. In the next decade, even as Beijing fields a larger and more capable array of reconnaissance satellites, it probably will continue to employ commercial satellite imagery to supplement its coverage. China currently accesses high-resolution, electro-optical and synthetic aperture radar commercial imagery from all of the major providers including Spot Image (Europe), Infoterra (Europe), MDA (Canada), Antrix (India), GeoEye (United States), and Digital Globe (United States).

Manned Space: China's most recent manned mission, Shenzhou-7, launched on September 25, 2008, and successfully conducted China's first spacewalk. China will continue its manned space program, including both manned and unmanned docking, with the final goal of a permanently manned space station by 2020.

Navigation and Timing: China is pursuing several avenues to reduce its dependence on any single foreign-owned satellite navigation system. Currently, the PRC uses the U.S. global positioning system (GPS), Russia's GLONASS, and its own BeiDou-1 system for navigation. The BeiDou-1 consists of three satellites and serves both civil and military purposes, but its orbital configuration covers only the East Asian region. The BeiDou-1 system will be replaced by a more capable, but still regionally constrained, BeiDou-2 system that is expected to become operational in 2011. The initial BeiDou-2 constellation will become part of a more advanced BeiDou-2/Compass system with global coverage, expected in the 2015-2020 timeframe.

Communications: China uses communications satellites for both regional and international telecommunications in support of civil and military users, including satellite television, internet, and telephony. China also maintains a single data-relay satellite launched in mid-2008, the TianLian-1. Along with regional development of related technologies, China has recently entered the world market by exporting satellites and infrastructure to Venezuela and Nigeria. Although the satellite built and launched for Nigeria failed, China continues to market its services worldwide, to customers such as Pakistan, Bolivia, Laos, and Vietnam.

ASAT Weapons: In January 2007, China successfully tested a direct-ascent ASAT weapon against a PRC weather satellite, demonstrating its ability to attack satellites in low-Earth orbit. China continues to develop and refine this system, which is one component of a multi-dimensional program to limit or prevent the use of space-based assets by potential adversaries during times of crisis or conflict.

China's nuclear arsenal has long provided Beijing with an inherent ASAT capability, although a nuclear explosion in space would also damage China's rapidly multiplying space assets, along with those of whomever it was trying to target. Foreign and indigenous systems give China the capability to jam common satellite communications bands and GPS receivers. In addition to the direct-ascent ASAT program, China is developing other technologies and concepts for kinetic and directed-energy (e.g., lasers, high-powered microwave, and particle beam) weapons for ASAT missions. Citing the requirements of its manned and lunar space programs, China is improving its ability to track and identify satellites—a prerequisite for effective, precise counterspace operations.