

## Sugon Ties to China's Hypersonic Weapons Program

Sugon is a leading high-performance computer company that supplies Chinese defense entities including at least one involved in China's hypersonic vehicle program.

Sugon Information Industry (曙光信息产业股份有限公司/ formerly known as Dawning) is China's leading developer of high performance supercomputers and openly supports China's military and defense industry. The company was established with resources from the Chinese Academy of Sciences (CAS) Institute of Computing Technology and the National Research Center for Intelligent Computing Systems.<sup>i</sup> Sugon also actively partners with Chinese associations that promote "military-civilian fusion" (军民融合) to promote the application of commercial technologies in the defense sphere.<sup>ii</sup>

According to a Sugon representative, China's space and missile industries use Sugon's high-performance computers to conduct aerodynamic simulations and other functions relevant to hypersonic vehicles. The company's products have been used in China's manned space program, satellite control, astronomical observation, missile development, aerospace engine development, and military aircraft design missions. Its satellite control stations in Beijing, Jiuquan, and Xian are reported to use Sugon's products.<sup>iii</sup>

Sugon's website openly advertises its support of Chinese military and security customers, including "unidentified" PLA Navy, PLA Air Force, Second Artillery (now the PLA Rocket Force), security departments, launch centers, and others.<sup>iv</sup> One of Sugon's clients is the China Academy of Launch Technology (CALT), a key organization for China's hypersonic vehicle program. According to Sugon, the company provided "high performance simulation computer platforms" (高性能仿真计算平台).<sup>v</sup>



Figure 1: Sugon webpage describing its provision of high-performance simulation and computation platforms to the China Academy of Launch Vehicle Technology (CALT).<sup>vi</sup>

CALT is subordinate to the China Aerospace Science and Technology Corporation (CASC), and is also known as the CASC First Academy. CASC is responsible for China's strategic ballistic missile and space systems, and appears to lead the country's hypersonic vehicle program. After a failed hypersonic vehicle test in August 2014, Chinese social media posts included pictures of the wreckage of booster rockets that clearly show the CASC logo, as seen below.<sup>vii</sup> CALT's products include China's liquid-fueled ballistic missiles (including the DF-4 and DF-5 ICBMs), and solid-fueled systems (e.g. DF-15 SRBM and DF-31/DF-31A ICBM). CALT is also a key organization for China's manned space program, with subordinate research institutes specializing in guidance, navigation, and control systems, reentry vehicles, and launchers. CALT also established the Near Space Flight Vehicle Research Institute (also known as the 10<sup>th</sup> Research Institute), which specializes in the design and development of hypersonic vehicles.<sup>viii</sup>



Figure 2: Pictures of Wreckage on August 7, 2014 (left) and CASC logo (right).

#### Sources:

<sup>i</sup> <http://hpc.sugon.com/en/more.html>

<sup>ii</sup> Two examples are Sugon's strategic partnership with the Chinese Institute of Command and Control (CICC), and its role as a strategic partner for the Second China Military and Civilian Integration Expo (第二届中国军民融合技术装备博览会). See <http://mil.huanqiu.com/china/2016-01/8392968.html>; <http://news.qq.com/a/20160116/018986.htm>; and <http://www.chinanews.com/mil/hd2011/2016/07-04/652824.shtml>.

<sup>iii</sup> <https://wenku.baidu.com/view/84cece43fe4733687e21aad8.html>

<sup>iv</sup> <http://www.sugon.com/solution/successcase/id/140209.html>

<sup>v</sup> <http://www.sugon.com/solution/detail/id/1026.html>

<sup>vi</sup> <http://www.sugon.com/solution/detail/id/1026.html>

<sup>vii</sup> <http://www.powerapple.com/news/international/2014/8/12/1789789.html>

<sup>viii</sup> Mark Stokes, "China's Evolving Space and Missile Industry" in Tai Ming Cheung (ed.) *Forging China's Military Might: A New Framework for Assessing Innovation*, (Baltimore: Johns Hopkins University Press), 2014, 253-254.