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MICRO/NANO SATELLITE TECHNOLOGIES AND APPLICATIONS IN CHINA

Abstract

Microsatellite and Nanosatellite technologies are becoming more and more active in China, from universities to research institute and industries, from scientific research to technology demonstration and to practical applications. Some launched project examples are: Tsinghua-1, the first microsatellite owned by a Chinese university in Beijing while being built by SSTL in UK; TS-1, the first microsatellite built in a Chinese university in Harbin; Chuangxin-1 (CX-1), the first Chinese microsatellite used for telecommunication built in Shanghai; Banxing-1 (BX-1), a microsatellite used to provide in-orbit images of the SZ-7 orbit module to inspect the space module and to conduct in-orbit proximity operations, built in Shanghai as well; Naxing-1, the first Nano satellite build by a Chinese university in Beijing; ZDPS-1A, the first Pico Satellite built by a Chinese University in Hangzhou; Tianxun-1 (TX-1), a microsatellite for Earth observation built by a university in Nanjing; Tiantuo-1, another Nano satellite built by university students in Changsha, etc. There are many on-going projects in micro/nanosatellite in universities, research institutes, and space industries across China. Very recently, several universities in China are participating the QB50 project in Europe, by providing CubeSat platforms to carry science payloads from QB50 for atmospheric science measurement tests. This paper will give a general overview of the past and on-going projects and activities in the Micro/Nano satellite engineering sector in China, discuss their related technologies , research and development activities and applications, introduce the major players in this field in China, and provide a prospective insight to the near future.