



Brief Introduction of Major Chinese Space Companies

China Aerospace Science and Technology Corporation (CASC)

CASC is a large state-owned enterprise group with its own famous brands such as Shenzhou and Long March, intellectual properties, outstanding innovative capabilities, and strong core competitiveness. CASC has 8 large R&D and production complexes, including the China Academy of Launch Vehicle Technology (CALT), Academy of Aerospace Solid Propulsion Technology (AASPT), China Academy of Space Technology (CAST), Academy of Aerospace Liquid Propulsion Technology (AALPT), Sichuan Academy of Aerospace Technology (SAAT), Shanghai Academy of Spaceflight Technology (SAST), China Aerospace Times Electronics Corporation (CATET), and China Academy of Aerospace Aerodynamics (CAAA) as well as a number of specialized companies such as China Great Wall Industry Corporation (CGWIC), listed companies and other units directly affiliated to it.

CASC is mainly engaged in the research, design, manufacture and launch of space systems such as launch vehicles, satellites and manned spaceships as well as strategic and tactical missiles, and also provides international commercial satellite launch service. It has the capability and experience needed to perform large system engineering management. Its R&D and industrial bases are mainly distributed over Beijing, Shanghai, Tianjin, Xi'an, Chengdu, Inner Mongolia, Hong Kong (Shenzhen) and Hainan. By virtue of space technology, CASC pays great attention to product development in such areas as satellite applications, information technology, new materials and regenerative energy, special space technology applications, special vehicles and auto parts, and space biology, and has formed a good development pattern. Over the past decades, CASC has made outstanding contributions to the national economic and social development, and scientific and technical progress.

At present, CASC is constructing a new aerospace industrial system to accelerate the development of its businesses, covering space systems, defense systems, aerospace technology applications, and aerospace services. It has been promoting exchanges and cooperation, dedicated itself to innovation, seen pioneering and rapid development, and building itself into a leading international aerospace enterprise group, thus making new contributions to the national modernization construction and peaceful exploration of space for mankind.

Website: www.spacechina.com

China Aerospace Science & Industry Corporation (CASIC)

As a large state-owned high-tech enterprise, the China Aerospace Science and Industry Corporation (CASIC) has now over 150 thousand employees, of which the professional and technical personnel accounts for 70% or so. It involves about 200 disciplines and professional fields, and possesses over 600 enterprises and institutions. CASIC has developed a series of high-tech products in aerospace defense, information technology, equipment manufacture and intelligence industry fields by means of its technology superiority, so its strategic position, core competitiveness and social influence are greatly improved. As the largest missile weapon designer and manufacturer in China,

CASIC boasts a comprehensive system for developing, researching and manufacturing air defense missile systems, cruise missile systems, solid rockets, and space products, covering land, sea, air, space and electromagnetism. Up to now, CASIC has successively developed dozens of advanced missile weapons, which contributes greatly to the modernization of China's national defense weaponry and equipment. CASIC is the main force of China aerospace industry, and has devoted itself to build a space-ground integrated security and support system in manned spaceflight, lunar exploration and other major national projects, featured by microwave measurement radar, γ altitude control device, Space Hospital and Space Kitchen.

Advancing towards the future, CASIC will stick to the four strategies of integration of military and civilian sectors, innovation-driven development, self-building with talents, and winning out of quality. CASIC will build itself into a world first class aerospace defense corporation by 2020 with space defense as its leading industry, with information technology and equipment manufacture as its major supporting



industries, and with its persistent efforts in the innovations in technology, business mode and management.

Website: www.casic.com.cn

China Academy of Launch Vehicle Technology (CALT)

CALT, subordinated to China Aerospace Science and Technology Corporation (CASC), is the largest space launch vehicle manufacturer in China and also the birthplace of China aerospace. Famous scientist Qian Xuesen was the founding president.

CALT was established on 16th Nov. 1957. There are twenty-two subordinate enterprises and institutions, three wholly-owned subsidiaries, five holding companies, two listed company and some share companies in CALT. Nowadays, CALT has thirty-two thousand employees and over 1100 employees with PhD degrees and more than 6000 with master degrees. The total assets of CALT are 110 billion. Over the past sixty years, CALT has undergone a rapid development with the hard work of generations of aerospace researchers. And now it has gradually formed a scientific research and production structure with the capabilities of multi-model development and batch production. CALT plays an important role in the three milestones of China aerospace industry: LM-1 launch vehicle Launches successfully the first man-made satellite of China which means the opening of China aerospace industry; LM-2F launch vehicle makes a success of launching manned spaceship which realizes the Chinese aspiring dream; LM-3A launch vehicle launches “Chang E” lunar exploration satellite which means the beginning of deep-space exploration. CALT always adhere to the policy of civil-military integration and coordinated development; actively promote the strategic cooperation with local governments and industrial groups; strengthen the leading role in the transformation of aerospace science and technology into the field of national economic construction. CALT has formed key sections of coal gasification, special vehicles, wind power, new materials and applications, aerospace special equipment, information technology and others, to achieve industrial development and to expand the international development space.

Website: www.calt.com

Academy of Aerospace Solid Propulsion Technology (AASPT)

Founded in 1962, AASPT is affiliated to China Aerospace Science & Technology Corporation (CASC). It is the biggest academy which specializes in research, development, test and production of solid propulsion system for launch vehicles, strategic and tactical missiles, satellites and manned spacecraft. As a dominant academy in the field of China aerospace solid propulsion, AASPT leads the development trend of China aerospace solid propulsion technology. Since the foundation of 1962, the Academy has won 1000 awards above Ministry level in total, among which 60 are National Level, and has possessed over 200 defense technical patents.

AASPT is devoted to applying aerospace technology to the national economy construction, and has made great progress in the field of Utilization of Solid Rocket Technology, Aerospace Material, and Modern Services. It has developed many high-tech products such as meteorological sounding rocket, high performance carbon fiber, high performance film material, weather modification system, anticorrosion explosive-cladding metal pipe, Carbon/Carbon brake discs for airplanes, thermal field material in photovoltaic industry and high performance sensors. The Academy has fulfilled social responsibilities of building resource-saving and environment-friendly innovation-oriented enterprise, promoting national science and technology progress and economic social development. Currently, AASPT is speeding up building new aerospace science and technology industrial structure, expanding the solid propulsion technology to some new fields including aerospace, deep space exploration, fast space response, promoting the transferring of aerospace technology into civil field, aiming at the application in New Material and New Energy area, and promoting international exchange and cooperation. The Academy is devoted to innovation and endeavored to make new contributions for the social development and peaceful utilization of aerospace technology.

Website: www.aaspt.net

China Academy of Space Technology (CAST)

Since the establishment in 1968, with more than 27 000 employees (average age of 35 years old) by 2015, CAST has become one of the world-class spacecraft designers and manufacturers, providing full range of integrated space-ground system solutions for global customers.



Besides the delivery of all kinds of spacecrafts from system level to equipment & component level, covering Telecommunications, Remote Sensing, Navigation, Human Spaceflight and Space Science Exploration. CAST also provides DC/AITC for spacecraft, satellite ground applications and customer-oriented service including training as well as orbit & frequency consulting. CAST would always pursue being: Professional in system engineering, project management, spacecraft manufacturing & AIT, applications and service with the support from highly qualified experts. Reliable for worldwide customers as the prime contractor of nearly 200 spacecrafts in which nearly 110 spacecrafts are working in orbit by 2015. Open to the world, sharing our space technology and experience with global partners in full dimension collaborations. Promising to adhere to the leading-edge technology and promote sustainable development of space infrastructures.

Website: www.en.cast.cn

Academy of Aerospace Propulsion Technology (AAPT)

Established in 1965, AAPT is the Chinese liquid-propellant engines specialized unit, and enjoys the reputation of “the cradle for China’s aerospace power”. After fifty years of effort, AAPT has developed integrated research and production system of liquid rocket engines, specializing in research, design, production and test. AAPT owns 12 enterprises and public institutions and holds the proprietary of Shaanxi Aerospace Propulsion High Tech Co., Ltd.

AAPT has nearly 17000 employees, including 2 academicians, 1 national specialist, 32 outstanding specialists of provincial level, 67 specialists that enjoy the state subsidy, 1 specialist that is awarded The National Technique Award, 19 national technicians and 2 national technician studios. The Academy has 2 institutions that have the qualification to award doctoral degree, and was identified as post-doctoral research station by The Ministry of Human Resources and Social Security of the PRC.

The Academy has developed over 100 types of liquid rocket engines, thrust ranging from 10mN to 1200kN. The engines have successfully fulfilled over 220 launch missions at home and abroad, including the projects of Shenzhou manned flights and lunar exploration, making great contributions to the development of China’s aerospace technology and space science.

Website: www.aapt.com

Sichuan Academy of Aerospace Technology (SCAAT)

Subordinated to China Aerospace Science and Technology Corporation(CASC), SCAAT is a large-sized high-tech group corporation with outstanding integration ability of aerospace products, complete specialities mating and strong power in independent innovation. Its pillar industry include production of national defense equipment, development of aerospace products, space technology application industry and serving industry.

SCAAT was established in 1965. Its headquarter is located in Longquanyi district, Chengdu, Sichuan province. There are 27 enterprise units and public institutions (including 18,000 employees) governed by SCAAT which possess an 2,000,000 m² aerospace science park integrated with business of scientific research, industry, commerce & trade and education. SCAAT has a complete scientific research and production system matched with specialities of manufacturing of major equipment, precision mechanical machining, electronic-controlled instrument, electro-hydraulic servo control system, pyrotechnics, microminiature turbojet engine and development of automobile components and parts. It has strong R&D ability, manufacturing ability, complete technological mating ability and strict quality assurance system.

SCAAT has ever successfully carried out production of multifarious national important aerospace equipment. Especially in some major project tasks and launching tasks of commercial satellites such as manned space project and moon exploration project. SCAAT undertakes R&D and production of cargo support subsystem of cargo spacecraft, material management subsystem of space station, tankage of carrier rocket, servo system & pyrotechnics and has mastered a lot of core technologies and made outstanding contributions to national aerospace industry and national defense modernization construction.

Shanghai Academy of Spaceflight Technology (SAST)

SAST was founded in August 1961, under the direct leadership of China Aerospace Science&Technology Corporation(CASC), SAST has evolved to one of the main forces of both China’s defense and space industry. The business scope of SAST covers from launcher to satellite in space, while



also do well in air defense products winning high reputation from the military customers. Most of the LEO launchers and all the meteorological satellite are from SAST, which occupying nearly half of its annual revenue, with the other half from SAST's civilian industry symbolized by Photovoltaic, Automobile Lithium cells and air conditioners, Composite material, High end equipment, etc.. There are 20 subsidiaries under SAST, with one listed company-SAAE.

SAST is one of the two general launch vehicles R&D bases of China. It has successfully developed the first Chinese sounding rocket. It has taken charge of the R&D of FB-1, LM-2D and LM-4 LM-6 series and LM-5 booster successively. Long March 2-D and Long March 4 series ,which are the current mainstream domestic launch vehicles, have been honored as "Gold Medal Launch Vehicles", occupying nearly 40% of domestic launchings annually and successfully entered the global market with high reputation from the international customers including Brazil, Turkey, Venezuela etc..SAST is one of the main R&D units of application satellites. It has assumed the R&D of satellites in the fields of "environment and meteorology", "remote sensing" and so on. The weights of the satellites vary from 50 kg to 10,000 kg and the satellites can be used in transportation of spacecrafts to different orbits ranging from 500 km LEO to 36,000 km. Three platforms of HEO, LEO as well as MEO and micro satellites have been formed. It also gets involved in the civil industries, such as solar photovoltaic power, power lithium ion battery, gas distribution and transmission, mechanical and electrical equipment, high-end auto parts, composite materials as well as import and export trades, etc.

Website: www.sast.cn

China Academy of Aerospace Electronics Technology (CAAET)

CAAET is a professional large-scale scientific research and production academy directly subject to China Aerospace Science and Technology Corporation (CASC), it is the world-class integrated solution provider of military and civilian electronics technology & products as well as system integration.CAAET owns a number of subordinate units distributed in Beijing, Xi'an, Shanghai, Chongqing, Hangzhou and other provinces and cities, and it has 25000 active employees, among which are 10400 professional and technical personnel, 2300 senior professional and technical personnel, including two Academicians.

CAAET is committed to the professional technology upgrading of Inertial Navigation , Telemetry and Telecontrol, Microelectronics & Computer, Electromechanical Components, System Integration and Products. Based on its professional technology, CAAET has established National Engineering Research Center of Satellite Navigation Applications, Research Center for Marine Telemetry Engineering Technology, Chinese International Cooperation Base of Advanced Photonics and Electronics Technology, International Joint Research Center for Space Electronic Information Technology, National Inertial Products Quality Supervision and Inspection Center, Aerospace Semiconductor Device Failure Analysis Center. CAAET actively expands internet of things, robotics, security monitoring, satellite navigation and special communication market, provides integrated solution and application program, and makes greater contribution to the realization of the aerospace dream and the promotion of economic development.

Website: www.caaet.cn

The China Academy of Aerospace Aerodynamics (CAAA)

CAAA was established by Prof. Qian Xuesen in 1956, and it is the first large aerodynamic research and test center as well as the core organization for aerodynamics research of China. The academy has participated in national research and development work on various aircraft vehicle and made important contributions to national significant project and key aircraft model.

CAAA has an excellent research team and more than 2000 staffs, of which over 60% are technicians. There are also 340 senior technicians and 30 national experts. CAAA mainly engages in general aerodynamic technology of flight vehicle and developed aerodynamic optimization design, aerodynamic performance prediction and CFD simulation method. The Academy has 24 wind tunnels, including low-speed, transonic, supersonic, hypersonic and arc heater tunnels with advanced test technique and measurement system. CAAA also developed special flight vehicle system such as UAVs and MAVs. A UAV research and manufacture system was established and produced a series of multi-mission MALE type UAV system with great-international-influence, including CH-3, CH-4,CH-5. CAAA is willing to sincerely cooperate with the friends in the world for China aerospace engineering and the development of aerodynamics.



Website: www.caaa-spacechina.com

Academy of Information Technology of CASIC

China Aerospace Science & Industry Academy of Information Technology (The First Academy) is founded in July 2002, affiliated to China Aerospace Science and Industry Cooperation (CASIC). The First Academy is the professional research academy in information technology research, product development and systems integration. The business line includes Smart Industry product R&D, production, operation and service (Smart Transportation, Smart Testing & Instrument, Smart Tourism and Smart Enterprise) and Aerospace Application product R&D, production, operation and service (Satellite Navigation, Satellite Communication, Satellite Remote Sensing). The clients are from government, police, transportation, tourism, forestry, finance, education, healthcare and power industry.

The Academy is constituted of one headquarter and nine subsidiary companies in Beijing, Nanjing, Xi'an, Guangzhou and Wuxi. The Academy is the National Technology Transfer Demonstration Institute assigned by Chinese Science and Technology Ministry. The Academy owns Level One Computer Systems Integration Qualification; Level One High Way Comprehensive System Engineering Qualification; Level One Security Technology Protection System Design, Construction, Repairing and Mapping Qualification; ISO9000 Series Qualification. The Academy has accomplished multiple National Key Research Projects and National Industrial Projects. The Academy has been authorized over 300 general patents, over 100 invention patents, over 100 Ministry Level Award and 3 Special-class National Scientific Progress Award since its founded.

Website: www.xxjs.casic.cn

The Academy of China Changfeng Electromechanical Technology

ACCET was founded since 1957. The ACCET includes 9 professional research centers exploring the state-of-the-art technology, 3 large-scale manufacture centers, 1 listed Company and 6 Service Centers facilitating the lives of ACCET people. The ACCET employs a workforce of more than 19,000 employees, amongst whom 6 academicians of the Chinese Academy of Sciences (CAS) and the Chinese Academy of Engineering (CAE) and a large group of committed and dedicated experts escort the leading technology of ACCET. The ACCET crowned the First Patent for Invention and Solutions in 1985, received more than 2,500 National and Ministerial and topped 4 times National Awards for Progress in Science and Technology since 1979.

The ACCET has succeeded in carrying out many national projects and making great contributions to civil life. The ACCET-made satellite-recovery radar accurately measured and calculated the trace of returning satellite. The ACCET-developed microwave radar fulfilled the rendezvous-and-docking of Shenzhou Space Craft. The ACCET focuses on and tailors to customer needs, upholds the philosophy of reliable quality and supreme service, stands ready to provide the internal and overseas customer with first-class system solutions, products and services.

Website: www.fyis.casic.cn

Hiwing Technology Academy of CASIC

Hiwing Technology Academy of CASIC is an R&D and production base of cruise vehicles, covering research, design, production and test. It has established comprehensive institutes, final assembly factories and supportive units that are specialized in system design, propulsion, inertial navigation, radar and telemetry, infrared and laser, special material and computers. Relying on aerospace technology, it has developed series of cruise missile weapon systems and UAVs and has enjoyed a high reputation for excellent product performances and comprehensive services. At the same time, it is always focusing on the latest development of international aerospace technologies and strengthening international exchange and cooperation. Guided by "military and civilian integration" concept, it dedicates to developing high-tech and high value-added products, establishing a top-ranking cruise vehicle academy in the world and provides satisfactory products and services for the customers.

Website: www.fhjs.casic.cn

The Vehicle Technology Academy of CASIC

The Vehicle Technology Academy of CASIC was established in December 2011 on the base of merge of the former Fourth Academy of CASIC and the former Ninth Academy of CASIC, administrated by CASIC, and engaging in developing and manufacturing of solid missile weapon system and solid rockets, as



well as the special off-road vehicles and chassis.

Headquartered in Wuhan city Hubei province The Vehicle Technology Academy of CASIC owns over 42 billion assets and has over 18 thousand employees and 31 subordinate entities scattering in Wuhan, Xiaogan, Yuanan, Beijing and Nanjing cities. Pursuing the concept of Self-dependent innovation, the fourth Academy of CASIC has developed the technological innovation system with unique characteristics, and set up one National Enterprises Technical Center, one National Engineering Laboratory and one Chinese National Engineering Center, 15 Provincial Enterprises Technical Centers, 12 Provincial and Engineering Laboratories and centers, 7 provincial Innovative pilot enterprises, 3 academician workstations and 3 post-doctoral workstations. Fourth Academy of CASIC also continued to follow the path of integration of military and civilian sectors and made effort to the regional economy. Inspired by 4+2+N strategy, priority has been given to the 4 Key Industries of the commercial aerospace industry, the laser equipment industry, the natural gas equipment industry and the special vehicle & heavy industrial equipment manufacture. The new information technology industry and modernized service industry have been pushed forwards and subordinate entities has been fully supported to develop numerous products in military and civilian integration

Website: www.cssg.casic.com.cn

Power Technology Academy of China Aerospace Science & Industry Corporation

As a member of China Aerospace Science & Industry Corp. (CASIC), the Power Technology Academy was first founded in 1962. The Academy is the first base for the study, production and test of solid rocket motor in China and is renowned as the cradle of solid rocket motor. The Power Technology Academy now consists of five professional institutes, three large-scale production plants, three civil product companies, and three supporting service assurance companies with more than 7,000 employees among which 71 are experts of provincial and ministerial level. Besides, 49 employees have been granted with special government allowance.

Under the joint efforts of generations of aerospace researchers, the Academy has successfully developed tactical, strategic and aerospace rocket motors with over 100 models during the past fifty years. The third stage solid motor for Long March 1 sent the first Chinese artificial earth satellite (DongFangHong-1) into space. The Academy has received over 400 national and provincial scientific awards successively and won the one-and-only High Quality Solid Rocket Motor Gold Medal.

Website: www.dljs.casic.cn

Gui Zhou Aerospace Technology Academy

Gui Zhou Aerospace Technology Academy is subordinated to China Aerospace Science & Industry Corporation, with a registered capital of 1.19 billion RMB. It boasts 16 industrial enterprises (with 1 listed company) and 9 institutions with its gross value amounting to 17.6 billion RMB. It has nearly 14,000 existing employees, among which more than 7,000 are professional technicians and nearly 800 enjoying senior technical title and above.

Its subsidiary enterprises cover a variety of business range, from machinery, electronics, electric appliance, chemical industry, metallurgy and etc., enjoying outstanding advantages and strong cooperating and assorting capability in the research and production of power supply, special micro-motor, relay, electrical connector, special cabin, and etc. For the past few decades, it has contributed a lot to undertaking assorting research and production tasks. For the past several decades, it has been staying firmly on the path of civil military integration: focusing on giving full play to the aerospace and military technology while at the same time dedicating to making the civil industry stronger and better. To date, much priority has been given to the development of equipment manufacturing and electrical information, forming a new civil industry structure of 5 advanced technical equipments, 3 major industrial parts and 3 sophisticated electromechanical components, which highly promoted local economic development.

Webiste: www.gzht.casic.cn