



Organization and Structure of the Aviation Industry Corporation of China (AVIC)



Prepared by BluePath Labs

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January 2024

Printed in the United States of America
by the China Aerospace Studies Institute

To request additional copies, please direct inquiries to
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Air University, 55 Lemay Plaza, Montgomery, AL 36112

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PART 1: INTRODUCTION TO AVIC

Introduction

Established in 1951, the Aviation Industry Corporation of China (AVIC) is China's largest aviation enterprise, responsible for producing essentially all of China's domestic military aircraft, UAVs, and helicopters, as well as a wide range of civilian aircraft and other aviation and non-aviation products and services. From a U.S. perspective, AVIC can be thought of as if Lockheed Martin, Northrup Grumman, Sikorsky, large parts of Boeing and Raytheon, and essentially all other domestic aviation companies were all subsidiaries of a single corporation, which was also heavily invested in automobiles, commodities, insurance, finance, and a range of other schemes. As of 2023, AVIC employs 386,000 personnel,ⁱ has total assets valued at 1.27 trillion RMB (\$179 billion),ⁱ and had a 2022 total operating income of 555 billion RMB (\$78 billion) and 2022 annual net profits of 18.93 billion RMB (\$2.66 billion).² It oversees 86 laboratories and applied research centers, including roughly 33 scientific research institutes, nine national key laboratories, five defense S&T key laboratories,ⁱⁱ 41 aviation technology key laboratories, 32 national-level enterprise technology centers, 32 provincial and ministerial enterprise technology centers, and eight technology innovation centers.³ It has hundreds of subsidiaries in all provincial-level divisions of China, along with more than one hundred overseas entities.⁴ It is also highly connected to international aviation companies. Its many subsidiaries have joint ventures, foreign acquisitions, licensed manufacturing agreements, production and maintenance agreements, and other forms of cooperation with companies across the world. These have included Boeing, Airbus, Bombardier, Safran, Goodrich, Sikorsky, Rolls Royce, Pratt & Whitney, UTC, GE, and Honeywell. All of this serves to make AVIC both China and the world's second largest defense company by overall revenue, and the fourth to eighth (based on different calculations) largest defense company in the world by defense revenue.⁵

This report maps out AVIC's organization and corporate structure, as well as providing extensive information on its component parts. Splitting AVIC into six core competencies,ⁱⁱⁱ it includes profiles of AVIC and over 170 of its subsidiary companies, factories, and research institutes. Where found, these profiles include information on these subsidiaries' products and services, history, size, funding, aliases, collaborations, personnel, and infrastructure. While not 100% comprehensive (as AVIC has countless other minor subsidiaries unrelated to its core defense and aviation businesses), this report aims to provide the most detailed view of AVIC's organization available in open sources, shining light on the inner workings of China's largest and most complex state-owned defense conglomerates.

ⁱ January 2024 Chinese yuan to United States dollar exchange rate

ⁱⁱ For more information on AVIC's Defense S&T Key Labs, see Ma Xiu, "The PRC State & Defense Laboratory System Part Two: Defense S&T Key Lab Directory," China Aerospace Studies Institute, 2023.

<https://www.airuniversity.af.edu/LinkClick.aspx?fileticket=kW8zGJeZ7Ew%3d&portalid=10>

ⁱⁱⁱ These categories are: 1. Military Aviation and Weaponry, 2. Helicopters, 3. Aviation Systems, Components, and Accessories, 4. Aviation Research and Testing, 5. Civil Aviation, and 6. Other Products and Services

History

AVIC's original incarnation, the "Ministry of Machine Industry" (MMI) under the Ministry of Defense, was established in 1951 by the Government Administration Council of the Central People's Government.⁶ During the first Five Year Plan (1953-1957), the MMI expanded to include a number of aviation colleges and universities as well as 13 supporting enterprises.⁷ This expansion allowed the PRC's nascent aviation industry to shift focus from maintaining the aircraft they had to producing their own equipment and aircraft. This was accomplished with significant aid from the USSR, as aircraft and equipment during this period were copies of models produced by the Soviet Union, such as the MiG-19.

During the 1960s and 70s, the MMI's scope expanded to include more specialized aircraft and helicopters. These included the CJ-6 trainer, the Z-5 helicopter, the Q-5 ground assault aircraft, the J-7 fighter, the H-5 light bomber, the Y-7 transport, and the KJ-1 early warning aircraft.⁸ While the emphasis was clearly on military aircraft, it developed civilian aircraft as well, such as the Y-10 passenger aircraft, completed in 1980.

Like many industries, China's aviation industry shifted scope by expanding its civilian product offerings following Deng Xiaoping's rise to power in the late 1970s. The MMI was reorganized as the Ministry of Aerospace Industry and transferred from the Ministry of Defense to the State Council.⁹ During this time, the PRC produced 20 civilian aircraft models, as well as its first air-to-air missile and the Z-8 large transport helicopter.

In the 1980s, China's aviation industry began to expand internationally. In 1985, an agreement was reached with McDonnell-Douglas for 25 MD-82 airliners to be produced in Shanghai. This was followed by PRC participation in the 27th International Aviation Expo held in the UK in 1986. Further, in 1990 the Y-12 transport aircraft obtained an airworthiness certification from the British Civil Aviation Authority, displaying an increased degree of sophistication from China's aircraft industry.¹⁰

AVIC was created in 1993 by breaking up the Ministry of Aerospace Industry into the Aviation Industry Corporation of China (AVIC) and the China Aerospace Corporation (CASC) and placing them under the Commission for Science, Technology, and Industry for National Defense (COSTIND).¹¹ In 1999, AVIC was further split into AVIC I and AVIC II. AVIC I was tasked with developing large aircraft such as bombers (H-6, JH-7), medium commercial aircraft (ARJ-21), and fighters (J-7, J-8, J-10, J-11, and JF-17), while AVIC II was responsible for smaller aircraft and helicopters.¹²

This experiment did not last long, however. By 2008, the two AVICs were again merged into a single company and placed under the Ministry of Industry and Information Technology (MIIT). In 2009, following the re-merger, AVIC became the first PRC defense company to join the Fortune Global 500 list. In 2011, China's first stealth aircraft, the J-20 fighter produced by AVIC's Chengdu Aircraft Industry Group, made its maiden flight.¹³

In 2016, AVIC's aeroengine enterprises were split off to form a second aviation company, the Aero Engine Corporation of China (AECC) [中国航空发动机集团有限公司(中国航发)].¹⁴

In late July 2017, the State Council announced a plan to implement structural changes to several important state-owned enterprises, including AVIC. In January 2018, AVIC became a limited corporation¹⁵ now solely-owned by SASAC, centralizing the State Council's power in terms of funding and personnel decisions.¹⁶

AVIC Evolution



AVIC’s chart representing its various incarnations since 1951¹⁷

The table below provides a brief comparison of AVIC’s main subsidiaries in 2009, the year after it was re-formed as a single company, and 2022-2023. In 2009, AVIC featured 19 major subsidiaries. By 2023, it was sectioned into 12 direct subsidiaries and 10 direct business units, in large part due to the break-up of the AVIC Defense Branch into its constituent companies.¹⁸

Further, AVIC’s direct major subsidiaries were previously organized by industrial sector [板块], with all third-level organizations falling under one of several groupings: defense/aviation equipment, transport aircraft, engines, helicopters, airborne equipment and systems, general aircraft, aeronautical research, flight testing, trade & logistics, asset management, finance, engineering, planning & construction, and automobiles.¹⁹ There no longer appears to be such an official categorization after 2015.

AVIC Subsidiaries Comparison	
2009 Subsidiaries	2022-2023 Subsidiary Changes
Aviation Industry Corporation of China Defense Branch [中国航空工业集团公司防务分公司]	Defunct
AVIC Aircraft Co., Ltd. [中航飞机有限责任公司]	Name changed to Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司]
AVIC Engine Holdings Co., Ltd. [中航发动机控股有限公司]	Now part of Aero Engine Corporation of China (AECC)
AVIC Helicopter Co., Ltd. [中航直升机有限责任公司]	Name changed to Avicopter [中国直升机设计研究所]
AVIC Avionics Systems Co., Ltd. [中航航空电子系统有限责任公司]	Now subordinate to AVIC Aerospace System Co., Ltd. [中航机载系统有限公司]

AVIC Electromechanical Systems Co. Ltd. [中航机电系统有限公司]	Now subordinate to AVIC Aerospace System Co., Ltd. [中航机载系统有限公司]
China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司]	No change
AVIC Asset Management Division [中航资产管理事业部]	Name changed to AVIC Asset Management Corporation Ltd. [中航资产管理有限公司]
AVIC International Holding Corporation [中国航空技术国际控股有限公司]	No change
AVIC Basic Technology Research Institute [中航工业基础技术研究院]	Defunct
China Aviation Industry Economic and Technological Research Institute [中国航空工业经济技术研究院]	Defunct
Chinese Flight Test Establishment [中国飞行试验研究院]	No change
AVIC Investment Holdings Co., Ltd. [中航投资控股股份有限公司]	Name changed to AVIC Industry-Finance Holdings Co., Ltd. [中航工业产融控股股份有限公司]
AVIC Automobile Industry Co., Ltd. [中国航空汽车工业有限公司]	Name changed to AVIC Automotive Systems Holdings Co., Ltd. [中国航空汽车系统控股有限公司]
China National Aero-Technology Import & Export Corporation [中航技进出口有限责任公司]	No change
AVIC Commercial Aircraft Engine Co., Ltd. [中航商用飞机发动机有限责任公司]	Now part of Aero Engine Corporation of China (AECC)
China Aviation Planning, Construction and Development Co., Ltd. [中国航空规划建设发展有限公司]	China Aviation Planning and Design Institute (Group) Co., Ltd. [中国航空规划设计研究总院有限公司]
Joy Air LLC [幸福航空有限责任公司]	Now a minor subsidiary
AVIC Heavy Machinery Co., Ltd. [中航重机股份有限公司]	Now subordinate to China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司]
N/A	AVIC Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司]
N/A	AVIC Aerospace System Co., Ltd. [中航机载系统有限公司]
N/A	Chinese Aeronautical Establishment [中国航空研究院]
N/A	China Aviation Manufacturing Technology Institute [中国航空制造技术研究院]

N/A	AVIC Shenyang Aircraft Industry (Group) Co., Ltd. [沈阳飞机工业(集团)有限公司]
N/A	AVIC Jiangxi Hongdu Aviation Industry Group Co., Ltd. [江西洪都航空工业集团有限责任公司]
N/A	Shenyang Aircraft Design Institute [沈阳飞机设计研究所]
N/A	Chengdu Aircraft Design Institute [成都飞机设计研究所]
N/A	Changhe Aircraft Industries (Group) Co., Ltd. [昌河飞机工业(集团)有限责任公司]
N/A	AVIC Harbin Aircraft Industry Group Co., Ltd. [中国航空工业哈尔滨飞机工业集团有限公司]
N/A	China Airborne Missile Academy [中国空空导弹研究院]
N/A	AVIC Digital Technology [金航数码科技有限责任公司]

Fields and Products



Scale models of recent AVIC products: the J-20 stealth aircraft, Y-20 large transport, and Z-20 helicopter²⁰

AVIC is a far-reaching organization whose business scope extends well beyond aviation engineering and research. It officially classifies its four main fields of operation as military aviation

and defense, civil aviation, industrial manufacturing, and modern services,²¹ with significant interests in finance, capital management, automobiles, commodities, engineering and construction, import-export, and real estate.

AVIC's main military aviation products include fighter, fighter-bomber, bomber, transport, trainer, reconnaissance, and general-purpose aircraft, helicopters, UAVs, and other aircraft. It also develops air-to-air, air-to-surface, and surface-to-air missiles.²² Today, AVIC's most prominent military aviation series include the J-10, J-11, J-15, J-16, and J-20 combat aircraft, the Y-20 "Kunpeng" large transport aircraft, the Z-10 attack helicopter, the Z-20 medium-lift utility helicopter, the H-6 series of bombers, and the "Wing Loong" UAV, among others.²³

AVIC also produces, through its various subsidiaries, much of the hardware and support equipment utilized by these military aircraft. This includes numerous avionics and flight control components, such as electronics, IT systems, communications, navigation, and auto-pilot systems.²⁴ It also produces electromechanical components for electrical power, fuel, hydraulics, aircraft environment control, fire protection, and de-icing. AVIC is further involved in basic and applied research, aviation flight testing and simulation, modifications and maintenance of aircraft, and pilot training.

In the civil aviation field, AVIC has produced numerous civilian aircraft, helicopters, and aerospace systems.²⁵ Prominent civil products include the MA60, 600 and 700 series passenger aircraft, the MA600F civil freighter, the Cirrus Vision SF50 private business aircraft, the Y-5 multifunctional aircraft, and the HO300 seaplane. It also includes small-sized UAVs²⁶ such as the Harrier Hawk remote sensing civilian UAV,^{iv} the Aries personal UAV, and the Andromeda tethered UAV. As with its military aviation line, AVIC is also responsible for a wide range of support systems and equipment for civil aviation.

Beyond aviation, AVIC's industrial manufacturing capabilities are also diverse and include automotive components, electronic equipment, power distribution systems, machine tooling and welding, and motors for a range of uses. As mentioned above, AVIC is also an important vendor of a wide range of "modern services," including R&D, aircraft leasing, financial management, retail services, the ownership of various hotels and shopping malls, and civil engineering projects such as construction of airports, power plants, and bridges.²⁷

Administration and Party-State Connections

As one of China's ten major defense state-owned enterprises (SOE), AVIC is overseen by the State-owned Assets Supervision and Administration Commission (SASAC),²⁸ while its business operations are overseen by the State Administration for Science, Technology, and Industry for National Defense (SASTIND) (under the Ministry of Industry and Information Technology, MIIT).²⁹ As with all of China's defense SOEs, it also maintains close military procurement relationships with the PLA Central Military Commission (CMC) Equipment Development Department (EDD) and the service equipment procurement bureaus.³⁰

Under China's policy of "sectorization" [行业化] for its defense SOEs, in which each SOE focuses on a particular industrial sector (e.g. aviation, shipbuilding, electronics, etc.),³¹ AVIC is

^{iv} Subsequent models of this UAV have been employed by the PLA

responsible for the great majority of aviation products.^v This means that it researches, designs, tests, and manufactures virtually all of China's indigenous military aircraft, helicopters, and UAVs, as well as much of its other airborne weapons and technology.

As large conglomerates, China's defense SOEs have also expanded to include a wide range of non-defense industries outside their areas of core competence, and may in fact use their profits in these sectors to finance their defense work. This is the result of the market modernization reforms of the 1990s which reduced state support and forced these SOEs to sink or swim. As stated previously, AVIC is no exception to this, having extended into numerous non-aviation sectors such as automobiles and auto parts, IT, finance, insurance, commodities, import-export, and civil engineering.³² Today, AVIC derives the majority of its revenue from these non-defense endeavors, in contrast to most defense giants outside the PRC. In 2022, AVIC's defense revenue was, depending on the measures used, an estimated \$20.6-30.9 billion out of \$82.5 billion overall revenue (or only 25-37% of overall revenue).³³

Unlike its U.S. counterparts, AVIC's primary duty is not to shareholders, but to the service of the Chinese Party-state and its defense goals, particularly through Beijing's strategy of bringing these two together in the form of military-civil fusion (MCF) [军民融合]. It often mentions upholding "the primary responsibility of strengthening the military" (or "building a strong military") [强军首责], a phrase also used by the other major defense SOEs.³⁴ In 2019, AVIC adopted a new development strategy, "One Mission, Two Integrations, Three Capabilities, Five Upgrades" [一心、两融、三力、五化], in which the top two items concern serving the country and MCF:³⁵

- *One Mission:* Firmly adhere to the original intention of "serving the country through aviation" and carry out the mission of "strengthening the country through aviation"
- *Two Integrations:* Implement the new development model of "military-civilian fusion" and "industrial integration"
- *Three Capabilities:* Become a world-class aviation enterprise group with "leading innovation, advanced culture, and excellent competitiveness"
- *Five Upgrades:* Adhere to the development path and principles of "intensive operation, precision management, market-oriented reform, systematic development, and international win-win"

Interestingly, however, AVIC attempts to hide this fact in its official English translation, as numbers "One" and "Two" leave out any reference to "serving the nation" or MCF:³⁶

- *One Mission:* We aim for integration into both the global aviation industry chain and regional development economic circles.
- *Two Integrations:* We are committed to transforming and upgrading the Group's core competitiveness, moving from the traditional triad of capital, technology, and management to the new trinity of branding, innovative business model, and integrated networking.

Statements by AVIC's top leadership also emphasize AVIC's role in MCF and loyalty to the Communist Party. In AVIC's 2014 corporate social responsibility report, then-Chairman Lin Zuoming wrote the following:

^v The smaller Aero Engine Corporation of China (AECC) has also been spun off in recent years from AVIC and focuses more narrowly on aircraft engines.

As one of the important industries and key fields of the national security and the national economy...Our mission is to serve the security of national defense and economic development...AVIC always regards “serve our country with aviation” as its core responsibility and adheres to military-oriented strategy, while supplying munitions with high quality and efficiency, and guaranteeing military aircraft... AVIC has always regarded civil-military fusion as its historical mission.³⁷

In the 2017 edition, then-Chairman Tan Ruisong similarly wrote:

Being absolutely loyal to the Party, bearing the original intention of serving the country in mind, and keeping in mind the mission of making the armed forces powerful have been the political responsibilities that we have consistently upheld...practicing the primary responsibility of serving the country and “making the armed forces powerful” through aviation...we insist on the development philosophy of military-civilian fusion.³⁸

In 2018, at AVIC’s first military-civilian fusion development work meeting, AVIC Executive Vice President Chen Yuanxian [陈元先] stated that the aviation industry was the “main force” of military-civilian fusion development in the defense industry.³⁹

AVIC has aimed to do its part in carrying out PRC government initiatives, promoting the implementation of the 14th Five-Year Plan and the Medium and Long-term Development Plan, and carrying out the three-year action plan for SOE reform [国企改革三年行动].⁴⁰ The latter appears to involve significant downsizing and consolidation on AVIC’s part.

AVIC is also tightly connected to China’s defense establishment. It regularly meets and coordinates with PLA and military-industrial bodies such as SASTIND, the PLA EDD, the CMC Science and Technology Commission, and other stakeholders, and meets with the PLA Air Force each year to plan military R&D priorities for the year.⁴¹

Stakeholders	Expectations for the corporation	Communication and response
 <p>The Party Central Committee, Central Military Commission</p>	<p>Implement Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, strengthen the military through revitalizing equipment, reform and innovate, safeguard national security, serve economic and social development, and enhance people's livelihood and well-being.</p>	<p>Strengthen Party building, fully implement the spirit of General Secretary Xi Jinping's important instructions and the decisions and arrangements of the Party Central Committee, adhere to the original intention of serving the country through aviation, adhere to the primary responsibility of strengthening the military, adhere to innovation and drive, persist in deepening reforms, and strive to build a strong aviation nation in the new era.</p>
 <p>State Council, ministries and commissions</p>	<p>Implement national policies, laws and regulations, focus on the development of the aviation equipment manufacturing industry according to the requirements of the national Medium- & Long-term Plan and promote the development of civil and general aviation; participate in economic construction in a wide range of fields and serve the national economy and the people's livelihood</p>	<p>Implement laws, regulations and policies; guarantee the primary responsibility of building strong armed forces, and support economic development. Staff representatives attend the NPC and CPPCC, and participate in the formulation of the relevant laws, regulations and policies. Offer advice and suggestions for the healthy development of the industry. Submit statistical statement</p>
 <p>SASAC of the State Council, the relevant ministries and commissions</p>	<p>Ensure the inflation-proofing and appreciation of the state-owned assets. Actively implement the strategies of "Going-out" and "the Belt and Road Initiative", integrate into the world aviation industry chain, comprehensively carry out activities to improve management, and make the main industry stronger and better</p>	<p>Focus on the main industry, and improve quality and efficiency; enhance the assessment of EVA; improve the institutional system; accept survey and visits; cooperate with the audit supervision of all parties; work reports on special topic; system for reporting major matters; daily statistics report</p>
 <p>CSRC, stock exchanges</p>	<p>Follow securities laws and regulations, cooperate with the regulation on securities trading, and actively undertake and perform responsibilities of the actual controller and controlling shareholders; cooperate to maintain the stability of the capital market</p>	<p>Cooperate with regulation; sign the strategic cooperation agreement; carry out information disclosure in terms of compliance; take active responsibility and maintain the stability of the stock market</p>
 <p>Local governments</p>	<p>Participate in investment in the development of the local economy, promote local employment, pay taxes in accordance with law, operate according to law, alleviate poverty and support education and undertake the community responsibility of large enterprises</p>	<p>Implement laws, regulations and policies; guarantee the primary responsibility of building strong armed forces, and support economic development. Staff representatives attend the NPC and CPPCC, and participate in the formulation of the relevant laws, regulations and policies. Offer advice and suggestions for the healthy development of the industry. Submit statistical statement</p>

AVIC chart representing its relationship with various stakeholders⁴²

Corporate Structure

AVIC itself functions primarily as a holding company, allocating resources, managing its many subsidiaries, and coordinating with both the PRC government and foreign partners.⁴³ Its subsidiaries generally fall under the categories of companies, research institutes, bases, divisions, and departments.

AVIC is divided into three main levels: AVIC Headquarters, direct subsidiaries, and secondary subsidiaries. The latter two are also known as second- and third-level work units [二级单位/三级单位], or occasionally, as second/third-level enterprises [企业].⁴⁴ AVIC is composed of approximately 100 of these third-level member units.⁴⁵ Below these exist still further, smaller subsidiaries. There are also numerous other minor organizations directly subordinate to AVIC HQ that are not part of this scheme.

AVIC Overall Organization⁴⁶			
AVIC Headquarters	Level 1		
Direct Subsidiaries	Level 2	“Business Units” [直属单位] / second-level units [二级单位]	Estimated count: 22
Subsidiaries	Level 3	“Member units” [成员单位] / third-level units [三级单位]	Estimated count: approximately 100
Fourth-level Organizations	Level 4	Companies, “departments” [部门], “factory branches” [分厂], “research officers” [研究室]	Estimated count: several hundred
Fifth-level Organizations	Level 5	Companies, “divisions” [科室], and “workshops” [车间]	Estimated count: over one thousand

AVIC’s headquarters is composed of the following departments:

AVIC Headquarters Departments [总部部门]⁴⁷
General Management Department / Party Group Office (Party Group Inspection Tour Office) / Board of Directors Office [综合管理部 / 党组办 (党组巡视办) / 董事会办]
Department of Planning and Development [规划发展部]
Planning and Finance Department [计划财务部]
Capital Operation Department [资本运营部]
Party Group (&) Cadre Department / Human Resources Department [党组干部部 / 人力资源部]
Science, Technology, and Information Technology Department [科技与信息化部]
Defense Affairs General Department [防务综合部]
Defense Scientific Research Department [防务科研部]
Civil Aircraft National Cooperation Department [民机国合部]
Quality and Safety Department [质量安全部]
Audit (&) Legal Department [审计法律部]
Party Building and Propaganda Department [党建文宣部]
Discipline Inspection and Supervision Group [纪检监察组]
Retirement Management Center/Veteran Cadre Department [离退休管理中心/老干部部]

AVIC also directly manages several other organizations, including both companies and centers, that don’t fall under the main subsidiaries. These are mostly smaller entities, and include the following:

AVIC Directly-Managed Functional Units [直管功能单位]⁴⁸
AVIC Aviation Service Guarantee (Tianjin) Co., Ltd. [中航航空服务保障 (天津) 有限公司]
AVIC Cabin Systems [中航客舱系统有限公司]
Joy Air Holdings, Ltd. [幸福航空控股有限公司]
AVIC Finance Co., Ltd. [财务有限责任公司]

AVIC Culture Co. Ltd. [中航文化有限公司/中航工业文化股份公司]
Beijing AVIC Hotel Property Management Co. Ltd. [北京艾维克酒店物业管理有限责任公司]
AVIC (Hong Kong) [中国航空工业集团（香港）有限公司]
AVIC Zhongguancun Technology Co., Ltd. [中航中关村科技有限公司]
General Technology Group Healthcare Co., Ltd. [通用技术集团医疗健康有限公司]
Agency Service Center [机关服务中心]
Training Center [培训中心]
Audit Center [审计中心]

At the second level lie AVIC's largest subsidiaries, which include the following:

Major Directly-Subordinate Subsidiaries^{49vi}
Xi'an Aircraft Industry Group Company Ltd. [中航西安飞机工业集团股份有限公司]
AVIC Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司]
Chengdu Aircraft Design Institute [成都飞机设计研究所]
AVIC Shenyang Aircraft Industry Group [中国航空工业沈阳飞机工业集团有限公司]
Shenyang Aircraft Design Institute [沈阳飞机设计研究所]
AVIC Jiangxi Hongdu Aviation Industry Group Co., Ltd. [江西洪都航空工业集团有限责任公司]
China Helicopter Research and Design Institute [中国直升机设计研究所]
Changhe Aircraft Industries (Group) Co., Ltd. [昌河飞机工业(集团)有限责任公司]
AVIC Harbin Aircraft Industry Group Co., Ltd. [中国航空工业哈尔滨飞机工业集团有限公司]
AVIC Aerospace Systems Co., Ltd. [中航机载系统有限公司]
AVIC International Holding Corporation [中国航空技术国际控股有限公司]
China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司]
China Aviation Manufacturing Technology Institute [中国航空制造技术研究院]
China Aviation Planning and Design Institute (Group) Co., Ltd. [中国航空规划设计研究总院有限公司]
Chinese Aeronautical Establishment [中国航空研究院]
China Flight Test Research Institute [中国飞行试验研究院]
AVIC Automotive Systems Holdings Co., Ltd. [中国航空汽车系统控股有限公司]
China Airborne Missile Academy [中国空空导弹研究院]
China National Aero-Technology Import & Export Corporation [中航技进出口有限责任公司]
AVIC Asset Management Corporation Ltd. [中航资产管理有限公司]
AVIC Industry-Finance Holdings Co., Ltd. [中航工业产融控股股份有限公司]
AVIC Digital Technology [中航数码科技有限责任公司]

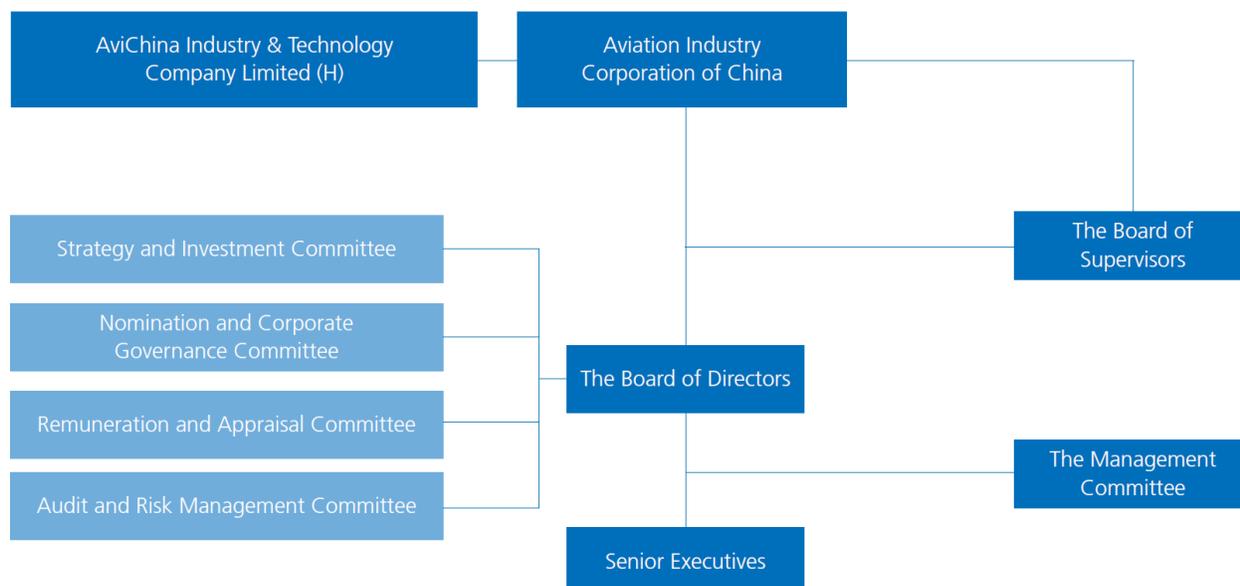
^{vi} These are divided into directly Subordinate Units [直属单位] & Directly Subordinate Business Units [直属业务单位].

Many of AVIC's subsidiaries are also listed on various stock exchanges, mostly in China.

AVIC Listed Companies [上市公司]⁵⁰
FACC AG (Austrian FACC) [奥地利未来先进复合材料股份有限公司]
KHD Humboldt Wedag International AG (KWG:GR) [德国洪堡]
AviChina Industry & Technology Company Limited [中国航空科技工业股份有限公司]
AVIC International Holding (HK) Limited [中国航空工业国际控股(香港)有限公司]
Nexteer Automotive [耐世特汽车系统集团有限公司]
AVICOPTER PLC [中航直升机股份有限公司]
China Avionics Systems Co. Ltd. [中航航空电子系统股份有限公司]
AVIC Aviation High-Technology Co. Ltd. [中航航空高科技股份有限公司]
AVIC Shenyang Aircraft Company Limited [中航沈飞股份有限公司]
AVIC Heavy Machinery Co. Ltd. [中航重机股份有限公司]
AVIC Capital Co. Ltd. [中航资本控股股份有限公司]
Jiangxi Hongdu Aviation Industry Co. Ltd. [江西洪都航空工业股份有限公司]
Baosheng Science and Technology Innovation Co. Ltd. [宝胜科技创新股份有限公司]
Guizhou Guihang Automotive Components Co. Ltd. [贵州贵航汽车零部件股份有限公司]
FIYTA (Group) Co. Ltd. [飞亚达精密科技股份有限公司]
Tianma Microelectronics Co. Ltd. [天马微电子股份有限公司]
Sichuan Chengfei Integration Technology Co. Ltd. [四川成飞集成科技股份有限公司]
AVIC JONHON Optronics Technology Co. Ltd. [中航光电科技股份有限公司]
AVIC Xifei (formerly AVIC Aircraft Co. Ltd.) [中航西飞/中航飞机股份有限公司]
AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司]
Rainbow Department Store Co. Ltd. [天虹商场股份有限公司]
Shennan Circuits Co. Ltd. [深南电路股份有限公司]
Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司]
Avic Forstar S&T Co Ltd [中航富士达科技股份有限公司]
AVIC (Chengdu) UAS Co., Ltd [中航（成都）无人机系统股份有限公司]
Hefei Jianghang Aircraft Equipment Co., Ltd. [合肥江航飞机装备股份有限公司]

Leadership and Personnel

AVIC has historically been led by a Board of Directors whose Chairman, the top official, also serves as the Secretary of the company's Communist Party Group, while the second-ranked President serves as the first Party Deputy Secretary. Notably, the Party affiliations of senior AVIC leadership are absent in their English-language profiles. As with other SOEs, AVIC's top leadership is appointed by the State-owned Assets Supervision and Administration Commission.⁵¹



AVIC graphic of its top-level structure (unclear if Board of Supervisors and Management Committee still exist, and at this level; the Party Group appears to be co-equal with the Board of Directors)⁵²

AVIC’s most recent Chair, Tan Ruisong [谭瑞松], was dismissed from his position by the CCP Central Committee Organization Department in March 2023, officially due to “age regulations.”⁵³ Of note, this happened in the same year as a reported wave of purges believed to be related to corruption in PLA acquisitions which have likely spread to include the top executives of other defense aerospace SOEs.⁵⁴ There have been unsubstantiated rumors that he has been purged or investigated.⁵⁵ However, Tan’s dismissal predated the first public purges by several months. Further, the 61-year-old Tan was within the retirement window for top SOE leaders (normally 60, but can go up to 63),⁵⁶ and he may have been preparing to step down at around that time.⁵⁷ It remains unclear whether Tan’s dismissal merely due to age, was punitive in nature, or related to the ongoing corruption purge. If he is purged it is possible more information, perhaps in the form of legal charges, may come to light later; it is possible that the details of his removal may remain unknown.



No replacement as Chairman has been named as of January 2024, but AVIC President Hao Zhaoping [郝照平] (pictured) appears to be filling the role of interim top official,⁵⁸ while board member and second deputy Party secretary Li Qingtang [李清堂], who previously held a variety of top roles in the state-owned China National Nuclear Corporation (CNNC),⁵⁹ is now effectively the second-ranked official.

In addition to serving as President, Hao Zhaoping also serves as a board member and the first Deputy Party Secretary. He received his Bachelor’s Degree in Aircraft Structure and Strength from the PLA National University of Defense Technology, and a Master’s Degree from the CASC China Academy of Launch Vehicle Technology.⁶⁰ Prior to this, Hao served in a number of key positions at the CASC China Academy

of Launch Vehicle Technology, eventually being promoted to President of the organization. In 2019, he was named as Executive Vice President of AVIC.⁶¹

Other Personnel

According to AVIC, as of mid-2023 the organization employed 386,000 personnel, down from 409,622 in 2009 and down from a high of around 550,000 in 2014.^{62vii} As of 2021 or earlier, 77,000 are managerial staff (17.9% of personnel), while technical and “skilled” workers account for 28.3% and 53.8% of personnel, respectively.⁶³

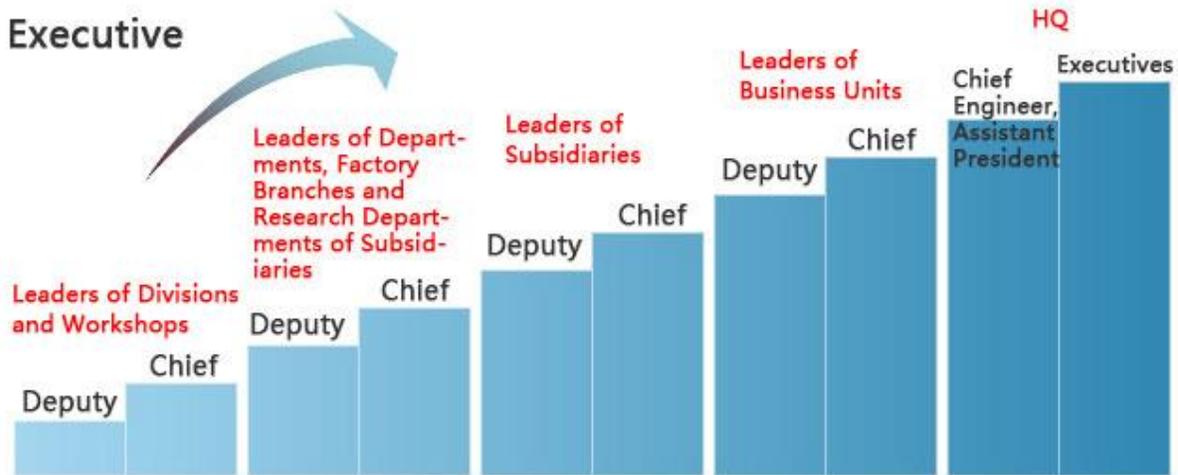
AVIC employees generally follow one of four major career tracks.⁶⁴ These are the executive, non-executive, engineering (although “technical” may be a more accurate definition), and skilled tracks. Each track follows a set and predictable progression of positions, making it possible to track the career progress and relative seniority of AVIC personnel by their titles. These ranking systems with fixed titles and positions bear a similarity to other governmental organizations within China’s professional bureaucracy or the People’s Liberation Army.



AVIC graphic illustrating the primary career paths for AVIC employees⁶⁵

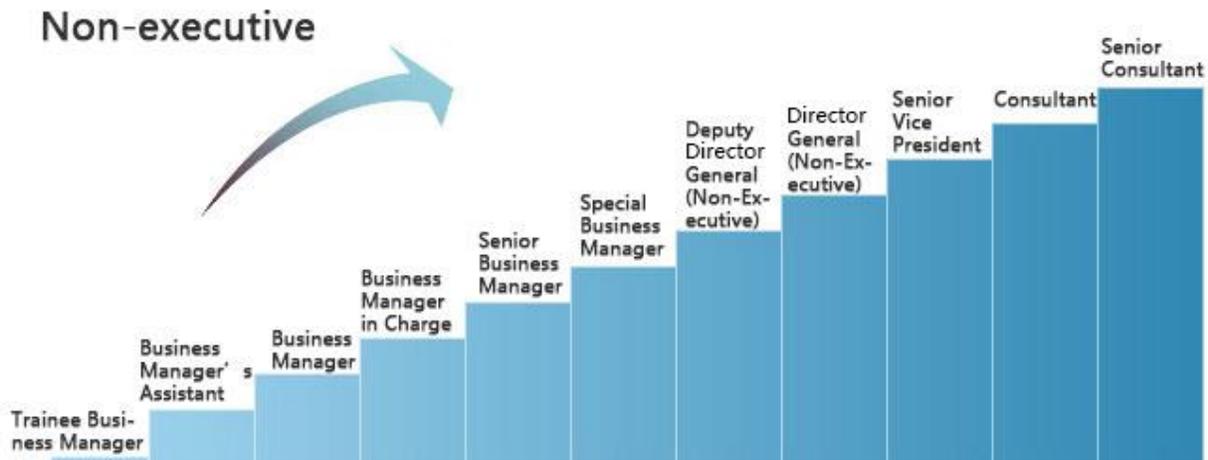
The executive track is for leadership positions. Personnel begin by heading individual divisions or workshops within a low-level organization, before eventually moving up the track to leading an individual department, factory, or research department within a subsidiary. This is followed by heading a subsidiary, then a business unit, and eventually becoming an executive within AVIC HQ.

^{vii} This is due at least in part to AVIC’s aeroengine enterprises splitting off to become AECC in 2016.



AVIC graphic illustrating the typical “executive” career track⁶⁶

The non-executive track appears to be focused on business-related career specializations, with titles evolving from business manager, to general director, to senior vice-president, to consultant. Presumably these consultants would be advising the executive track leaders.



AVIC graphic illustrating the typical “non-executive” career track⁶⁷

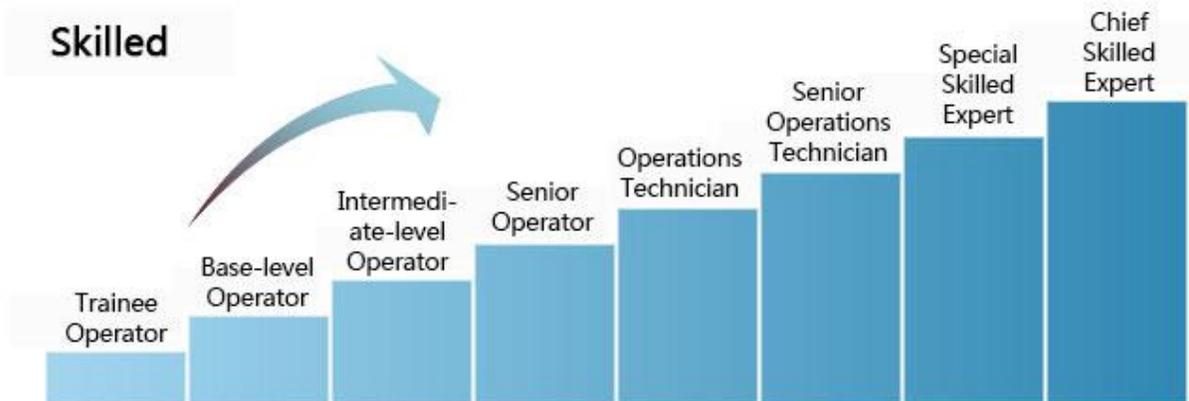
The engineering career track involves 12 ranks beginning with designer, then advancing to chief engineer, and finally technical expert.

Engineering



AVIC graphic illustrating the typical “engineering” career track⁶⁸

Finally, the “skilled” career track appears to involve operations with 8 ranks and titles ranging from operator, to operations technician, to chief skilled expert. The “chief expert” ranks appear to be simply a rank and title, as opposed to a singular position, and there appear to be numerous “chief experts” across AVIC its various subsidiaries.



AVIC graphic illustrating the typical “skilled” career track⁶⁹

Inclusion on U.S. Government Export Screening Lists

Due to its significant contributions to China’s military, AVIC and many of its subsidiaries have been subject to export control by the U.S. government. The following is a non-exhaustive list of AVIC organizations on at least one U.S. government export screening list. These include the Treasury Department Office of Foreign Assets Control’s (OFAC) Chinese Military Companies list,

the Commerce Department Bureau of Industrial Security’s (BIS) Entity List and Military End User (MEU) List, the Department of Defense (DOD) Chinese Military Companies List, and the former DOD Communist Chinese Military Companies list.^{viii} For more information on these lists and their criteria, see Appendix 1.

AVIC Companies on U.S. Export Screening Lists	
Company	Export Screening Body
Aviation Industry Corporation of China (AVIC)	BIS (Entity List) DOD OFAC
AVIC Asset Management Corporation Ltd.	DOD
AVIC Automotive Systems Holdings Co., Ltd.	DOD
AVIC Aviation High-Technology Co., Ltd.	DOD OFAC
AviChina Industry and Technology Co., Ltd.	DOD
Avicopter	DOD
Beijing Ruisai Technology Co., Ltd.	DOD
AVIC CAPDI (Beijing) Technology Co., Ltd.	DOD
Changhe Aircraft Industries (Group) Co., Ltd.	BIS (Entity List)
Chengdu Aircraft Industry Group Co., Ltd.	BIS (Entity List) BIS (MEU) DOD
China Aviation Industry Standard Parts Manufacturing Co., Ltd.	BIS (Entity List)
China Aviation Manufacturing Technology Institute	BIS (Entity List)
China Avionics Systems Co., Ltd.	DOD OFAC
AVIC Electromechanical Systems Co. Ltd.	DOD
FIYTA Precision Technology Co., Ltd.	DOD
AVIC General Aircraft Zhejiang Institute Co., Ltd.	BIS (Entity List) BIS (MEU) DOD
AVIC General Huanan Aircraft Industry Co., Ltd.	BIS (Entity List) BIS (MEU) DOD
Guizhou Aviation Aircraft Co. Ltd.	DOD
Guizhou Guihang Automotive Components Co., Ltd.	DOD
Harbin Aircraft Industry Group Co., Ltd.	BIS (Entity List)
AVIC Heavy Machinery Co., Ltd.	DOD OFAC
Hubei Hangyu Jiatai Aircraft Equipment Co., Ltd.	BIS (Entity List)
AVIC Industry-Finance Holdings Co., Ltd.	DOD
AVIC International Holding Corporation	BIS (Entity List) BIS (MEU) DOD
AVIC International Hong Kong	DOD
Jiangxi Hongdu Aviation Industry Group Co., Ltd.	BIS (Entity List) DOD OFAC
Jonhon Optron Technology Co., Ltd.	DOD OFAC

^{viii} Importantly, the latter DOD list appeared to generally list parent companies and a non-comprehensive list of subsidiaries. This stands in contrast to other organizations that list individual subsidiaries based on their specific contributions to the PLA.

Leihua Electronic Technology Research Institute	BIS (Entity List) BIS (MEU) DOD
Nanjing Engineering Institute of Aircraft Systems	BIS (Entity List)
Qing'an Group Co., Ltd.	BIS (Entity List)
Rainbow Digital Commercial Co., Ltd.	DOD
Research Institute for Special Structures of Aeronautical Composites	BIS (Entity List)
Shaanxi Aircraft Industry Corporation	BIS (Entity List)
Shaanxi Hongyuan Aviation Forging Co., Ltd.	BIS (Entity List)
Shennan Circuits Co., Ltd.	DOD
Shenyang Aircraft Industry Group Co., Ltd.	BIS (Entity List) DOD OFAC
Sichuan Chengfei Integration Technology Co., Ltd.	DOD
Xi'an Aircraft Industry Group Company Ltd.	BIS (Entity List) BIS (MEU) DOD OFAC
Xi'an Aircraft Asset Management Co., Ltd.	DOD
Xi'an Flight Automatic Control Research Institute	BIS (Entity List) BIS (MEU) DOD
Zhonghang Electronic Measuring Instruments Co. Ltd.	OFAC

Of the over two hundred AVIC organizations either profiled or noted in this directory, less than one-quarter are on a U.S. export screening list. A large number of AVIC subsidiaries engaged in significant military activity remain unsanctioned as of this writing despite clearly meeting the criteria to do so (see Appendix 1). This includes major subsidiaries conducting militarily relevant work such as AVIC Aerospace System Co. and the China Helicopter Research and Design Institute, both of which have avoided being placed on any of these lists.

A lack of consistency in sanctioning AVIC subsidiaries may lead to serious holes in enforcement of export controls, as unsanctioned companies can be used as conduits for receipt of sensitive technologies. While putting a parent company on an entity list should forbid business with its subsidiaries, many subsidiaries are obfuscated and businesses often do not know that they are dealing with a sanctioned entity. For example, AVIC International (which is on a list) subsidiary Continental Aerospace Technologies (which is not) oversees several acquired U.S. and European aviation companies, including German aeroengine manufacturer Thielert, which produced the engine for the U.S. Army's MQ-1C Gray Eagle UCAV. These acquisitions may be helping improve China's UAV industry, specifically UAV piston engines, according to multiple Chinese sources.⁷⁰

Even for AVIC entities that have nothing to do with defense, AVIC itself is at its core a defense company, and has made its commitment to military-civil fusion (MCF) clear. Thus, any business conducted with AVIC or its subsidiaries is likely to benefit China's defense industrial base, whether directly through technology transfer, or indirectly through profits, as AVIC may use commercial profits to fund its defense work.

Sources and Limitations

AVIC is a massive organization, with potentially thousands of subsidiaries^{ix} and other subordinate entities.⁷¹ It has a convoluted and sprawling organizational structure, the result of several decades'-worth of constant mergers, acquisitions, divisions, and reforms. Oftentimes, AVIC subsidiaries are variously owned by one parent company, operationally subordinate to another, and operated in trust [托管] by a third. Leaders of some AVIC companies frequently sit on the boards of others, and numerous subsidiaries have very similar or even identical names. Its corporate ownership at multiple levels often resembles a crisscrossing spiderweb or circular ouroboros of various AVIC subsidiaries owning stakes in others. This is compounded by the fact that AVIC's websites, when they are accessible, are frequently out of date and rarely updated, resulting in a lack of timely and authoritative information.^x In addition, AVIC is continually reforming its structure. Individual companies and their shares frequently change hands, such that any organizational chart of AVIC will have significant inaccuracies within a short period of time. While the authors have made every effort to untangle this web and ensure accuracy, they acknowledge these limitations and take full responsibility for any inaccuracies. The research is current as of March 2023 unless otherwise noted.

The main sources for this report consisted of AVIC's official website, its subsidiaries' official websites, AVIC corporate reports, Chinese business information sites, university websites (which frequently have recruiting info likely provided by AVIC entities, as well as university-related AVIC news), and other news sites (especially the AVIC-run China Aviation News). Secondary sources included previous CASI publications on China's aerospace industry and military aerospace. Ken Allen's previous work on AVIC was a useful reference, as was the RAND Corporation report "The Effectiveness of China's Industrial Policies in Commercial Aviation Manufacturing."

^{ix} AVIC reportedly had at least one thousand subsidiaries at all levels as of 2016. Obviously, it would not be realistically possible to map every one of these entities. Rather, this report set out to map the most significant entities, with an emphasis on those related to aviation and defense.

^x As is becoming increasingly common on the Chinese internet, some webpages have become inaccessible since they were first accessed. In some cases, they have been saved in an online archive (such as the Internet Archive's Wayback Machine [archive.org] and archive.today), and can be accessed there.

PART 2: DIRECTORY OF AVIC ENTITIES

1. AVIATION INDUSTRY CORPORATION OF CHINA HEADQUARTERS [中国航空工业集团有限公司]

Aliases and Former Names:

- 中国航空工业集团公司
- 航空工业集团
- 航空工业
- 中航工业
- 中航集团
- 中航

Notable Products/Services: fighters, fighter bombers, bombers, transport aircraft, trainers, reconnaissance aircraft, helicopters, assault aircraft, general-purpose aircraft, unmanned aerial vehicles and other aircraft, as well as air-to-air, air-to-surface, and surface-to-air missiles⁷²

Immediate Parent Institution: State-owned Assets Supervision and Administration Commission (SASAC) [国务院国有资产监督管理委员会]⁷³

Corporate Ownership: State-owned Assets Supervision and Administration Commission (SASAC) [国务院国有资产监督管理委员会] (100%)⁷⁴

Address: Building 19, Yard 5, Shuguang Xili, Chaoyang District, Beijing [北京市朝阳区曙光西里甲5号院19号楼]⁷⁵

Websites:

Chinese:

- <https://www.avic.com/> (Archived: <https://web.archive.org/web/20231201010120/https://www.avic.com/>)
- <https://www.avic.com.cn/> (Archived: <https://web.archive.org/web/20231201010329/https://www.avic.com.cn/>)
- <https://m.avic.com/> (Archived: <https://web.archive.org/web/20230330191900/https://m.avic.com/>)

English:

- <https://en.avic.com/> (Archived: <https://web.archive.org/web/20240102225050/https://en.avic.com/>)
- <https://www.avic.com/en/> (last updated 2021) (Archived: <https://web.archive.org/web/20240102225311/https://www.avic.com/en/>)
- <https://enm.avic.com/> (Archived: <https://web.archive.org/web/20240102231309/https://enm.avic.com/>)

Weibo:

- <https://weibo.com/n/航空工业>
- <https://m.weibo.cn/u/3061210763>

WeChat:

- 航空工业 (ID: avic-2008)

Douyin:

- https://www.douyin.com/user/MS4wLjABAAAAReeCTd5h7yT4agFJKtp8mj5JCn2cOqQRRpTHT5asA_Y

China Aviation News [中国航空报]:

- <https://www.cannews.com.cn/>
- <https://ep.cannews.com.cn/publish/zghkb7/> (digital edition)
- <https://www.cannews.com.cn/pc/list/45/10253> (English articles)

Chinese Society of Aeronautics and Astronautics (CSAA) [中国航空学会]:

- <http://www.csaa.org.cn/>
- <http://en.csaa.org.cn/> (English)

Key Data:

Established: April 1951⁷⁶

Entrusted Management: 278.069 billion RMB (December 2014)⁷⁷

Personnel: 386,000 employees (end of 2021 / mid-2022)⁷⁸

Overview:

Aviation Industry Corporation of China (AVIC) is a state-owned enterprise managed by the central government, as well as an investment institution authorized by the Chinese government working in the field of aerospace research, development, and production.⁷⁹ It was reorganized into its current form on 6 November 2008.⁸⁰

The company operates in the fields of aviation weapons and equipment, military transport aircraft, helicopters, airborne systems, general aviation, aviation research, flight testing, aviation supply chain logistics, and special equipment development. Non-aviation products include auto parts, asset management, finance, and engineering construction projects.⁸¹

AVIC is also a large investment vehicle which incorporates securities companies, financial companies, leasing companies, trust companies, futures companies, industrial funds, and insurance companies into AVIC Capital through equity transfer and custody.⁸²

Notable Applications:

- AVIC subsidiaries produce essentially all of the PLA's indigenous aircraft, helicopters, and UAVs. Notable examples include:^{xi}
 - J-10, J-11, J-15, J-20, J-31, JH-7, JF-17 combat aircraft
 - Y-20 large transport aircraft
 - Z-10, Z-19 armed helicopters
 - H-6 series bombers
 - KJ-200, KJ-2000 early warning aircraft

^{xi} Profiles of many of their major products can be found on AVIC's site:

(<https://web.archive.org/web/20231201010300mp/https://www.avic.com/sycd/ywly/jyhkyfw/zdj/?PC=PC;>

<https://web.archive.org/web/20191025030936/http://www.avic.com/en/forbusiness/militaryaviationanddefense/index.shtml>).

- Wing Loong, Yaoying-series UAVs
- JL-9, JL-10 trainer aircraft
- PL-series air-to-air missiles
- AC series civil aircraft⁸³

Notable Collaborations:

Domestic:

AVIC lists the following domestic entities as major partners:

- China Railway Corporation [中国铁路总公司]
- COMAC [中国商飞]
- CCB International [建银国际]
- OCBC Bank [华侨银行]
- UNITA Insurance [安盟保险]
- Zhongguancun Development [中关村发展]⁸⁴

AVIC has worked on new materials, new technologies, and new energy projects with the following entities:⁸⁵

- Chengfei Integration [成飞集成] – joint investment in AVIC Lithium Battery
- AVIC Heavy Machinery [中航重机] - joint investment in AVIC Laser Forming Manufacturing Company Ltd. [中航激光成形制造有限公司]
- Hong Kong Future International Aviation Investment Company Ltd. [香港未来国际航空投资股份有限公司] - joint investment in FACC AG [奥地利未来先进复合材料股份有限公司]

AVIC Capital has participated in major mergers and acquisitions and reorganizations of AVIC Heavy Machinery, AVIC Black Panther (Hei Bao), Xifei Group, AVIC International, Shenfei Civil Aviation, Chengfei Civil Aviation, and others⁸⁶

International:

- In 2005, Airbus created a joint venture with AVIC called the Airbus Beijing Engineering Centre (ABEC), which carries out joint research with Chinese research institutions and is responsible for 5% of the A350 XWB airframe.⁸⁷
- AVIC claims more than 100 overseas foreign organizations.⁸⁸

Known Subsidiaries:

- AVIC is composed of more than 100 member units, and 24 listed companies. AVIC claims (date unclear) nearly 200 subsidiaries in total.⁸⁹
- It has an apparently co-equal investment entity - AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司]

Major directly-subordinate subsidiaries:

- Xi'an Aircraft Industry Group Co., Ltd.
- AVIC Chengdu Aircraft Industry Group Co., Ltd.
- Chengdu Aircraft Design Institute
- AVIC Shenyang Aircraft Industry Group

- Shenyang Aircraft Design Institute
- AVIC Jiangxi Hongdu Aviation Industry Group Co., Ltd.
- China Helicopter Research and Design Institute
- Changhe Aircraft Industries (Group) Co., Ltd.
- AVIC Harbin Aircraft Industry Group Co., Ltd.
- AVIC Aerospace Systems Co., Ltd.
- AVIC Electromechanical Systems Co. Ltd.
- China Avionics Systems Co., Ltd.
- AVIC International Holding Corporation
- China Aviation Industry General Aircraft Co., Ltd.
- China Aviation Manufacturing Technology Institute
- China Aviation Planning and Design Institute (Group) Co., Ltd.
- Chinese Aeronautical Establishment
- China Flight Test Research Institute
- AVIC Automotive Systems Holdings Co., Ltd.
- China Airborne Missile Academy
- China National Aero-Technology Import & Export Corporation
- AVIC Asset Management Corporation Ltd.
- AVIC Industry-Finance Holdings Co., Ltd.
- AVIC Digital Technology

Directly managed functional units [直管功能单位]:

- AVIC Aviation Service Guarantee (Tianjin) Co., Ltd. [中航航空服务保障（天津）有限公司]
- AVIC Cabin Systems [中航客舱系统有限公司]
 - AVIC Cabin Systems (ACS) is an integrated group company established in 2018 with a product portfolio that covers the essential features of the commercial aircraft cabin interiors. Its subsidiaries include ACS UK (including AIM Altitude (UK)), FACC (Austria), Fesher, Jiatai, and Thomason Aero Seating. The company is headquartered in London and largely aimed at Western customers, including Airbus and Boeing.
- Joy Air Holdings, Ltd. [幸福航空控股有限公司]
 - Joyair Co., Ltd. is an airline founded by AVIC in 2008, and has been controlled by Xi'an Aerospace Investment Co., Ltd. since November 2018. Since its establishment, Joyair has supported the development of domestic civil aircraft in China. The airline has 24 Modern Ark 60s, 5 Boeing 737-800s, more than 1000 employees, 6 overnight bases and more than 40 routes.
- AVIC Finance Co., Ltd. [财务有限责任公司]
- AVIC Culture Co. Ltd. [中航文化有限公司/中航工业文化股份公司]
- Beijing AVIC Hotel Property Management Co. Ltd. [北京艾维克酒店物业管理有限责任公司]
- AVIC (Hong Kong) [中国航空工业集团（香港）有限公司]
- AVIC Zhongguancun Technology Co., Ltd. [中航中关村科技有限公司]
- Agency Service Center [机关服务中心]

- Training Center [培训中心]
- Audit Center [审计中心]

Listed [上市] companies (many if not all are not under AVIC directly) with stock codes:

- FACC AG (Austrian FACC) [奥地利未来先进复合材料股份有限公司] (FACC)
- KHD Humboldt Wedag International AG [德国洪堡] (KWG:GR)
- AviChina Industry & Technology Company Limited [中国航空科技工业股份有限公司] (2357.HK)
- AVIC International Holding (HK) Limited [中国航空工业国际控股(香港)有限公司] (0232.HK)
- Nexteer Automotive [耐世特汽车系统集团有限公司] (1316.HK)
- AVICOPTER PLC [中航直升机股份有限公司] (600038.SH)
- China Avionics Systems Co. Ltd. [中航航空电子系统股份有限公司] (600372.SH)
- AVIC Aviation High-Technology Co. Ltd. [中航航空高科技股份有限公司] (600862.SH)
- Zhonghang Heibao Co. Ltd. [中航沈飞股份有限公司] (600760.SH)
- AVIC Heavy Machinery Co. Ltd. [中航重机股份有限公司] (600765.SH)
- AVIC Capital Co. Ltd. [中航资本控股股份有限公司] (600705.SH)
- Jiangxi Hongdu Aviation Industry Co. Ltd. [江西洪都航空工业股份有限公司] (600316.SH)
- Baosheng Science and Technology Innovation Co. Ltd. [宝胜科技创新股份有限公司] (600973.SH)
- Guizhou Guihang Automotive Components Co. Ltd. [贵州贵航汽车零部件股份有限公司] (600523.SH)
- FIYTA (Group) Co. Ltd. [飞亚达精密科技股份有限公司] (000026.SZ)
- Tianma Microelectronics Co. Ltd. [天马微电子股份有限公司] (000050.SZ)
- Sichuan Chengfei Integration Technology Co. Ltd. [四川成飞集成科技股份有限公司] (002190.SZ)
- AVIC JONHON Optronics Technology Co. Ltd. [中航光电科技股份有限公司] (002179.SZ)
- AVIC Xifei (formerly AVIC Aircraft Co. Ltd.) [中航西飞/中航飞机股份有限公司] (000768.SZ)
- AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (002013.SZ)
- Rainbow Department Store Co. Ltd. [天虹商场股份有限公司] (002419.SZ)
- Shennan Circuits Co. Ltd. [深南电路股份有限公司] (002916.SZ)
- Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司] (300114.SZ)
- Avic Forstar S&T Co Ltd [中航富士达科技股份有限公司] (835640)
- AVIC (Chengdu) UAS Co., Ltd [中航（成都）无人机系统股份有限公司] (688297.SH)
- Hefei Jianghang Aircraft Equipment Co., Ltd. [合肥江航飞机装备股份有限公司] (688586.SH)

Headquarters Departments [总部部门]:

- General Management Department / Party Group Office (Party Group Inspection Tour Office) / Board of Directors Office [综合管理部 / 党组办 (党组巡视办) / 董事会办]
- Department of Planning and Development [规划发展部]
- Planning and Finance Department [计划财务部]
- Capital Operation Department [资本运营部]
- Party Group (&) Cadre Department / Human Resources Department [党组干部部 / 人力资源部]
- Department of Science and Technology and Information Technology [科技与信息化部]
- Defense Affairs General Department [防务综合部]
- Defense Scientific Research Department [防务科研部]
- Civil Aircraft National Cooperation Department [民机国合部]
- Quality and Safety Department [质量安全部]
- Audit (&) Legal Department [审计法律部]
- Party Building and Propaganda Department [党建文宣部]
- Discipline Inspection and Supervision Group [纪检监察组]
- Retirement Management Center/Veteran Cadre Department [离退休管理中心/老干部部]

Other possibly directly-subordinate entities:

- Science and Technology Committee [科技委 / 科学技术委员会]
- Was directly subordinate as of 2019; current situation unclear
- Secrecy Committee [保密委员会]
 - Existed as of 2019; current situation unclear⁹⁰
- Chinese Society of Aeronautics and Astronautics (CSAA) [中国航空学会]
- General Technology Group Healthcare Co., Ltd. [通用技术集团医疗健康有限公司]
 - Was directly subordinate as of 2019; current situation unclear
- China Aviation News [中国航空报社]

Key Personnel:

- Hao Zhaoping [郝照平]: Board member; President; Deputy Party Group Secretary
- Li Qingtang [李清堂]: Board member; Deputy Party Group Secretary; Executive Vice President
- Zhang Minsheng [张民生]: Chief Accountant / Chief Finance Officer
- Yang Wei [杨伟]: (Executive) Vice President
- Ren Yukun [任玉琨]: Discipline Inspection and Supervision Group Leader [纪检监察组组长]
- Hong Jiao [洪蛟]: (Executive) Vice President
- He Shengqiang [何胜强]: (Executive) Vice President
- Zhang Jichao [张继超]: (Executive) Vice President⁹¹
- Liang Xiaogeng [梁晓庚]: Chief Weapons Guidance & Control Technology Expert [中航工业“武器制导控制技术”首席专家]⁹² (one of various)

- Wang Haifeng [王海峰]: Chief Technical Expert [航空工业首席技术专家] (one of numerous)⁹³

Equipment/Facilities:

- 86 laboratories and applied research centers
- 33 scientific research institutes
- nine national key laboratories
- five defense science & technology key laboratories
- 41 aviation technology key laboratories
- 32 national-level enterprise technology centers
- 32 provincial and ministerial enterprise technology centers
- 8 technology innovation centers.⁹⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List⁹⁵
- Present on U.S. Office of Foreign Asset Control Sanctions List⁹⁶
- Present on U.S. Department of Defense Communist Chinese Military Companies List⁹⁷

1.1. AVIC Aviation Service Guarantee (Tianjin) Co., Ltd. [中航航空服务保障（天津）有限公司]

Notable Products/Services: aviation support services, including support for aircraft spare parts, equipment sub-system installation and modification, ground cross-link testing and fault detection equipment, renovation of aviation weaponry and equipment

Immediate Parent Institution: AVIC⁹⁸

Corporate Ownership:

- AVIC [中国航空工业集团公司] (10%)
- CATIC [中国航空技术进出口公司] (20%)
- AVIC Aerospace Systems [中航机载系统有限公司] (17.333%)
- Shenyang Aircraft Corporation [沈阳飞机工业（集团）有限公司] (13.333%)
- Chengdu Aircraft Corporation [成都飞机工业集团] (13.333%)
- AVIC Hongdu [洪都航空工业集团有限责任公司] (6.667%)
- Tianjin Dida Economic Development Co., Ltd. [天津帝达经济发展有限公司] (6.667%)
- AVIC Chengdu Aircraft Design Institute [中航工业成都飞机设计研究所] (4.667%)
- AVIC Shenyang Aircraft Design Institute [沈阳飞机设计研究所] (4.667%)
- China Air-to-Air Missile Research Institute [中国空空导弹研究院] (3.333%)⁹⁹

Address:

No. 56, Huandong Main Road, Airport Economic Zone, Tianjin [天津市空港经济区环东干道五6号]¹⁰⁰

Key Data:

- Established: 2010
- Capital: 150 million RMB in registered capital¹⁰¹
- Personnel: 100-499 employees
- Floor space: 298,000 sqm¹⁰²

Overview:

AVIC Aviation Service Guarantee (Tianjin) Co., established in 2010, is a national defense and military enterprise directly subordinate to AVIC (though its actual ownership structure is complex). The company's main business is service and technical support following the installation of new aviation weaponry and equipment, support for aircraft spare parts, equipment sub-system installation and modification projects, development of ground cross-link testing and fault detection equipment, and renovation of aviation weaponry and equipment. It is a specialized aviation weaponry service enterprise built by AVIC to speed up the adaptation of the PLA's aviation weaponry and equipment.¹⁰³ The company is located in the Tianjin Airport Economic Zone, one of China's national comprehensive reform pilot zones.

Key Personnel:

- Qiao Mingjie [乔明杰]: Legal Representative¹⁰⁴

MILITARY AVIATION AND WEAPONRY

The task of producing essentially all of China's domestic military aircraft and UAVs is overseen by several AVIC subsidiaries, including Chengdu, Hongdu, Shenyang, and Xi'an, as well as two aircraft design institutes. Aero weaponry is primarily the purview of the China Airborne Missile Academy. In addition to their military aircraft lines, several of these companies also play a role in the production of various civil aircraft.

2. Chengdu Aircraft Design Institute [成都飞机设计研究所]

Aliases and Former Names:

- 611 Institute [611 所]
- Chengdu Aircraft Design and Research Institute

Notable Products/Services: combat aircraft, UAVs, other high-tech aerospace products¹⁰⁵

Immediate Parent Institution: AVIC¹⁰⁶

Address:

89 Ci Street, Wuhou District, Chengdu, Sichuan Province [四川省成都市武侯区祠大街 89 号]¹⁰⁷

Website: <http://www.cadi.ac.cn/>

Archived: <https://web.archive.org/web/20130509083637/http://www.cadi.ac.cn/v2009/>

Key Data:

- Established: 1970¹⁰⁸
- Floor space: 310,000 sqm¹⁰⁹

Overview:

The Chengdu Aircraft Design Institute (CADI) is mainly engaged in aircraft design and comprehensive aerospace multidisciplinary research. Its work is often related to design of China's advanced fighter aircraft, UAVs, and aerospace high-tech development. It is an important research and development link in China's aerospace research field.¹¹⁰

CADI has aided in the development of many of China's aircraft models such as the J-7, J-10, and JF-17 combat aircraft, UAVs, and other major 863 Program projects.¹¹¹

Notable Applications:

Has assisted in developing:

- J-7, J-10, JF-17 [枭龙] combat aircraft¹¹²
- J-20¹¹³
- WZ-8 hypersonic UAV¹¹⁴
- Wing Loong I Unmanned Aircraft System
 - The Harrier UAV

- The SW1 UAV
- The Nighthawk UAV¹¹⁵

Notable Collaborations:

Domestic:

- CADI has a long-standing comprehensive cooperation agreement with the University of Electronic Science and Technology [电子科技大学]¹¹⁶
- Guizhou Aircraft Industry Corporation¹¹⁷

International:

- CADI claims cooperation with more than 100 enterprises and institutions in more than 50 countries, including the United States, Britain, France, and Russia.¹¹⁸

Known Subsidiaries:

- Chengdu Kaidi Precision Technology Co., Ltd.[成都凯迪精工科技有限责任公司]
- Chengdu Kaidi Property Services Co., Ltd. [成都凯迪物业服务有限公司]¹¹⁹

Key Personnel:

- Zhao Min [赵民]: Director [所长]¹²⁰
- Sun Shaoshan [孙绍山]: Deputy Director¹²¹
- Wang Haifeng [王海峰]: Chief designer and AVIC chief technical expert (one of many)¹²²
- Li Yidong [李屹东]: Chief designer for the GJ-1 series of UAVs¹²³

2.1. Chengdu Kaidi Precision Technology Co., Ltd.[成都凯迪精工科技有限责任公司]

Aliases and Former Names:

- Chengdu Aircraft Design and Research Institute Manufacturing Center [成都飞机设计研究所制造中心]

Notable Products/Services: UAVs, wind tunnels, ground equipment, aircraft parts, composite materials, computer application and software development, non-standard equipment designs, mold and processing designs

Immediate Parent Institution: Chengdu Aircraft Design Institute

Corporate Ownership: Chengdu Aircraft Design Institute [成都飞机设计研究所] (100%)¹²⁴

Address:

No. 89, Wuhouci Street, Chengdu, Sichuan Province [四川省成都市武侯祠大街 89 号]¹²⁵

Key Data:

- Established: 1993
- Capital: 15 million RMB in registered capital
- Personnel: between 100 and 199 employees¹²⁶

Overview:

Chengdu Kaidi Precision Technology conducts research, development, production, and sales for a variety of products. These include wind tunnel test models for aviation and aerospace, comprehensive ground support equipment, airborne accessories, and aircraft structural parts. It also includes UAVs, UAV components, and supporting products, composite materials, computer application and software development, non-standard equipment design, mold and processing design, and technology transfer.¹²⁷

A subsidiary of AVIC Chengdu Aircraft Design and Research Institute, it was originally named Chengdu Aircraft Design and Research Institute Manufacturing Center [成都飞机设计研究所制造中心], before changing its name in 2017.

Key Personnel:

- Yang Weidong [杨卫东]: Chairman
- Tian Ping [田平]: CEO¹²⁸

3. Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司]

Aliases and Former Names:

- Factory 132 [132 厂]
- Chengfei Factory 132 [成飞 132 厂]
- AVIC Chengfei [成飞]

Notable Products/Services: combat aircraft, aviation weaponry and equipment, civil aircraft parts and components¹²⁹

Immediate Parent Institution: AVIC¹³⁰

Corporate Ownership: AVIC Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司] (100%);¹³¹ AVIC [中国航空工业集团公司] (100%) (formerly)¹³²

Address: No. 88, Weiyi Road, Huangtianba, Qingyang District, Chengdu City, Sichuan Province [四川省成都市青羊区 黄田坝纬一路 88 号]¹³³

Website: <https://cac.avic.com/>

Archived: <https://web.archive.org/web/20220815013331/https://cac.avic.com/>

Key Data:

- Established: 1958¹³⁴
- Capital: 729 million RMB in registered capital¹³⁵

Overview:

The AVIC Chengdu Aircraft Industry Group Co. (CAG/CAIG) is one of China's main bases for the development, production, and export of aviation weapons and equipment, an important manufacturer of civil aircraft parts and components, and a “national key advantageous enterprise” [国家重点优势企业]. The company has developed and produced thousands of aircraft over its lifetime, including the J-5, J-7, J-10, JF-17, J-20, and other military aircraft. It has also manufactured the nose cones of civilian aircraft such as the C919, ARJ21, and AG600.¹³⁶

Chengfei also owns the Chengdu Wenjiang Airfield [成都温江机场], which was used as a transfer base to support relief efforts after the 2008 Sichuan earthquake.¹³⁷

Notable Applications:

- J-10 fighter¹³⁸
- J-5 fighter¹³⁹
- J-7 fighter¹⁴⁰
- JF-17 fighter¹⁴¹
- J-20 fighter¹⁴²
- Components for the C919, ARJ21, and AG600 civil aircraft¹⁴³

Known Subsidiaries:

- Guizhou Aviation Aircraft Co., Ltd. [中航贵州飞机有限责任公司]
- Changsha 5712 Aircraft Industry Co., Ltd. [长沙五七一二飞机工业有限责任公司]
- Chengdu Chengfei Aviation Industry Development Co., Ltd. [成都成飞航空产业发展有限责任公司]
- Chengdu Chengfei Enterprise Management Co., Ltd. [成都成飞企业管理有限公司] (possibly directly under AVIC)¹⁴⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁴⁵
- Present on U.S. Department of Commerce Military End-User List¹⁴⁶
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁴⁷

3.1. Changsha 5712 Aircraft Industry Co., Ltd. [长沙五七一二飞机工业有限责任公司]

Aliases and Former Names:

- Factory 5712 [五七一二厂]
- AVIC Changfei [中航工业长飞]

Notable Products/Services: airborne equipment and overhaul support for combat, trainer aircraft, helicopters, and UAVs, battlefield emergency repair support

Immediate Parent Institution: Chengdu Aircraft Industry Group Co., Ltd.

Corporate Ownership: Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司] (100%)¹⁴⁸

Address: No. 450, Pitang Road, Tianxin District, Changsha, Hunan Province [湖南省长沙市天心区披塘路 450 号]¹⁴⁹

Key Data:

- Established: 1960,¹⁵⁰ reorganized 1985¹⁵¹
- Capital: 50 million RMB in registered capital¹⁵²
- Personnel: over 1,300 employees, including over 500 senior or mid-level technicians and managers¹⁵³

Overview:

The Changsha 5712 Aircraft Industry Co. (AVIC Changfei) undertakes the overhaul support, battlefield emergency repair support and various types of aircraft airborne equipment repair tasks for China's army's fighter aircraft, attack aircraft, bombers, trainer aircraft, helicopters, UAVs and other third- and fourth-generation fighter aircraft.¹⁵⁴ Changfei is responsible for the overhaul and service support of active-duty aircraft in the air force, navy and foreign military and trade aircraft.

The company is a large-scale aviation maintenance enterprise affiliated to AVIC, located in Changsha, the capital of Hunan Province. It was founded in 1960 as the Changfei used to be the 5712th Factory of the Chinese People's Liberation Army, before being transferred to AVIC in 2002. In 2017, it was placed under the management of AVIC Chengfei [成飞].¹⁵⁵

AVIC Changfei established China's first aviation maintenance enterprise technology center and aviation maintenance service support center, and established the first postgraduate innovation practice base with Beihang University. The company established the "Changfei Staff University", which jointly runs schools with Beijing University of Aeronautics and Astronautics, Nanchang Aviation University, and other universities to provide a platform for employees to further study. Its military aircraft maintenance and service support business has spread to countries in Southeast Asia and Africa.¹⁵⁶

Notable Collaborations:

- In 2021, Changfei signed a strategic cooperation agreement with Guifei.¹⁵⁷
- The company established the "Changfei Staff University", which jointly runs schools with Beihang University, Nanchang Aviation University and other universities to provide a platform for employees to further study.¹⁵⁸

Key Personnel:

- Zhan Jianping [湛建平]: Chairman; CEO¹⁵⁹
- Liu Huixiong [刘辉雄]: Party Secretary¹⁶⁰

3.2. Chengdu Chengfei Aviation Industry Development Co., Ltd. [成都成飞航空产业发展有限公司]

Immediate Parent Institution: Chengdu Aircraft Industry Group Co., Ltd.

Notable Products/Services: general aviation services

Address: Huangtianbei "Chengfei" Living Area Annex No. 124, Qingyang District, Chengdu, Sichuan Province [四川省成都市青羊区黄田坝“成飞”生活区附 124 号]¹⁶¹

Key Data:

- Established: 2011
- Personnel: 889 employees

Overview:

Chengdu Chengfei Aviation Industry Development's business scope focuses on general aviation services.¹⁶²

3.3. AVIC (Chengdu) UAS Co., Ltd. [中航（成都）无人机系统股份有限公司]

Aliases and Former Names

- AVIC UAS [中航无人机]¹⁶³

Notable Products/Services: large fixed-wing long-endurance UAV systems¹⁶⁴

Immediate Parent Institution: Chengdu Aircraft Industry Group Co., Ltd.¹⁶⁵

Corporate Ownership:¹⁶⁶

- Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司] (26.41%)
- Chengdu Aircraft Design Institute [成都飞机设计研究所] (16.30%)
- Chengdu Industry Investment Group Co., Ltd. [成都产业投资集团有限公司] (8.24%)
- Chengdu Jianguo Auto Trading Co., Ltd. [成都建国汽车贸易有限公司] (8.00%)
- China National Aero-Technology Import & Export Corporation [中航技进出口有限责任公司] (6.44%)
- Numerous others under 5%

Address: No. 199, Hezuo Road, High-tech Zone, Chengdu, Sichuan Province [四川成都市高新区合作路 199 号]¹⁶⁷

Website: <https://web.archive.org/web/20211125132509/http://avicuas.com/>

Key Data:

- Established: 2007¹⁶⁸
- Capital: 540 million RMB in registered capital¹⁶⁹
- Personnel: 405¹⁷⁰

Overview:

AVIC (Chengdu) UAS is mainly engaged in the design, production, test flight, and service of military-export UAVs and high-end industrial UAVs.¹⁷¹ Specifically, it produces large fixed-wing long-endurance UAV systems.¹⁷² Its scope of business includes design, production, repair, sales, leasing, after-sales service and technology development, technology transfer, technical consultation, and technical services of UAV systems, aerospace vehicles, and their supporting products.¹⁷³ Its website states that its main product, the Wing Loong [翼龙] UAV series, has been exported to many countries as part of the Belt and Road Initiative.¹⁷⁴

It is not to be confused with the other AVIC subsidiary of that shares this company's abbreviated name - AVIC UAV [中航无人机], under CAIGA.

Notable Applications:

- Wing Loong UAV series¹⁷⁵

3.4. Guizhou Aviation Aircraft Co., Ltd. [中航贵州飞机有限责任公司]

Aliases and Former Names:

- Guifei [贵飞公司]
- AVIC Guifei [航空工业贵飞]
- Guizhou Aircraft Company [贵州飞机公司]

Notable Products/Services: trainer aircraft, UAVs, light aircraft¹⁷⁶

Immediate Parent Institution: Chengdu Aircraft Industry Group Co., Ltd.¹⁷⁷

Corporate Ownership: Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司] (100%)¹⁷⁸

Address: Guifei Co., Airport Road, Songqi Town, Anshun Development Zone, Guizhou Province [贵州省安顺市开发区宋旗镇机场路贵飞公司]¹⁷⁹

Website: <http://avicgac.com/> or <http://www.gaius.net.cn/> (latter apparently defunct)

Archived: <https://web.archive.org/web/20170626012316/http://avicgac.com/>

Key Data:

- Established: 2011¹⁸⁰
- Assets: 4 billion RMB in total assets¹⁸¹
- Personnel: over 6,300 employees¹⁸²
- Floor space: over 3,866,666 sqm (5,800 mu)¹⁸³¹⁸⁴

Overview:

The Guizhou Aviation Aircraft Co. (GAC) designs, develops, and produces trainer aircraft, UAVs, and aviation parts and components.¹⁸⁵ The company builds the JL-9 jet trainer, an export version of which, the FTC-2000, is offered for international markets.¹⁸⁶ It has also been making significant investments in unmanned systems in recent years.¹⁸⁷

GAC was formed in 2011 from the integration of various Anshun area factories, namely Guizhou Shuangyang Aircraft Manufacturing Factory [贵州双阳飞机制造厂] (Factory 126 [一二六厂]), Guizhou Yunma Aircraft Manufacturing Factory [贵州云马飞机制造厂] (Factory 130 [一三〇厂]), Guizhou Aircraft Design Institute [贵州飞机设计研究所] (First Institute [一所]), Guizhou Lingyun Aviation Material Supply and Marketing Company [贵州航空物资供销公司] (Warehouse 602 [六〇二库]), Guizhou Guihang UAV Company [贵州贵航无人机公司], and the Guihang Aircraft Division [贵航飞机事业部].¹⁸⁸

Notable Applications:

- JL-9 jet trainer¹⁸⁹

- Yaoying series of medium-high altitude surveillance drones¹⁹⁰

Known Subsidiaries:

- Guizhou Guifei Aircraft Design and Research Institute Co., Ltd. [贵州贵飞飞机设计研究院有限公司]
- Guizhou Guihang Aircraft Design Research Institute [贵州贵航飞机设计研究所]¹⁹¹
- Guiyang Qianjiang Machinery Factory [贵阳黔江机械厂] (current status unclear)¹⁹²

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁹³

3.4.1. GUIZHOU GUIFEI AIRCRAFT DESIGN AND RESEARCH INSTITUTE CO., LTD. [贵州贵飞飞机设计研究院有限公司]

Aliases and Former Names:

- 648 Institute [648 所]¹⁹⁴
- Guizhou Aircraft Design Institute [贵州飞机设计研究所]
- Guizhou Guihang Aircraft Design Institute [贵州贵航飞机设计研究所]¹⁹⁵ (possibly no longer used)
- Guifei Institute [贵飞所]¹⁹⁶
- Guizhou Aviation Institute [贵航所]
- The First Design Office of the Third Engineering Bureau of Guizhou Province (011 Base) [贵州省三机局（011 基地）第一设计室] (former)¹⁹⁷
- First Design Institute of the 011 Base [011 基地第一设计室] (former)¹⁹⁸
- Guizhou Fighter Design Institute [贵州歼击机设计所] (former)¹⁹⁹

Notable Products/Services: combat, trainer, general-purpose aircraft and UAVs²⁰⁰

Immediate Parent Institution: Guizhou Aviation Aircraft Co., Ltd.²⁰¹

Corporate Ownership: Guizhou Aviation Aircraft Co., Ltd. [中航贵州飞机有限责任公司] (100%)²⁰²

Address: Guizhou Guihang Aircraft Design Institute, Lingyun Road, Anshun Development Zone, Anshun, Guizhou Province [贵州省安顺市开发区凌云路贵州贵航飞机设计研究所]²⁰³

Website: N/A

Key Data:

- Established: May 1968²⁰⁴

Overview:

The Guizhou Guifei Aircraft Design and Research Institute, also known as the Guizhou Aircraft Design Institute, is a comprehensive scientific research and design institute that designs fighter jets, advanced trainer aircraft, general-purpose aircraft, and UAVs.²⁰⁵ It engages in research and production tasks assigned by the Chinese government, which can include aviation and non-aviation scientific research and production tasks, electromechanical technology development, technology transfer, technical consultation, and technical services.²⁰⁶

Research areas include aerodynamics, overall layout, structural strength, machinery, hydraulic air-conditioning, electrical components, communication and navigation, integrated avionics, flight control, flight testing, reliability engineering, comprehensive support, computer simulation, load measurement and control, UAV test flight, materials, scientific and technological information science, translation, network engineering, software design and development, and others.²⁰⁷

It was originally under China National Guizhou Aviation Industry (Group) Co., Ltd. (GAIC) before moving to GAC.²⁰⁸

Notable Applications:

- The Institute has contributed design elements to several types of fighters and training aircraft, including the J-6 series, J-7 II and JJ-7, JL-9, FTC-2000 series, and the Yaoying-series of UAVs.²⁰⁹

Key Personnel:

- Han Ronggao [韩荣高]: Chairman; CEO²¹⁰

Equipment/Facilities:

- 10 design and research laboratories
- 3 sets of network data systems, designed for analysis issues and design challenges for aircraft research, as well as sharing information for design and technology with partner institutions.²¹¹

4. China Airborne Missile Academy [中国空空导弹研究院]

Aliases and Former Names:

- 612 Institute [612 所]
- 014 Base [014 基地]²¹²

- 014 Center [014 中心]²¹³
- (AVIC) Missile Academy [(航空工业)导弹院]

Notable Products/Services: air-to-air missiles, guidance systems, automatic controls, radio, infrared, laser, signal processing, microwave, computer, and communications equipment, precision machinery, rocket motors²¹⁴

Immediate Parent Institution: AVIC²¹⁵

Address: Luoyang, Henan Province [河南省洛阳市]²¹⁶ (possibly at one of the same locations as its subsidiaries)

Website: <https://cama.zhiye.com/> (recruiting website)

Archived: <https://web.archive.org/web/20190803091219/https://cama.zhiye.com/>

Key Data:

- Established: August 2001²¹⁷
- Personnel: over 5,700 employees²¹⁸

Overview:

The China Airborne Missile Academy (CAMA) primarily develops air-to-air missiles. It also produces precision machinery, electronic assembly, infrared detector parts, and modern measurement equipment, as well as physical, chemical, environmental, and electrical testing capabilities.²¹⁹ While primarily an R&D organization for AVIC, CAMA also offers several masters and doctoral programs and has sponsored various youth talent development programs since 2011.²²⁰ It oversees the *Aero Weaponry* [航空兵器] academic journal.

The current iteration of CAMA was created through the merger of two organizations in 2001, the original China Airborne Missile Academy and the Nanfeng Company [南峰公司].²²¹ Prior to the consolidation of AVIC in 2008, CAMA was under AVIC 1.²²² It is strongly connected to AVIC Optronics.²²³

Notable Applications:

- Air-to-air missiles, including the PL-4, PL-9, PL-12, and PL-15²²⁴

Notable Collaborations:

Domestic:

- Frequently draws employees from, and exchanges doctoral and master students with, Tsinghua University, Nankai University, Beihang University, Beijing Institute of Technology, Northwestern Polytechnical University, Xidian University, Nanjing University of Aeronautics and Astronautics, and other key universities in China.²²⁵

Known Subsidiaries:

- CAMA Luoyang Electromechanic Company [凯迈（洛阳）机电有限公司]²²⁶
- CAMA Luoyang Gas Supply Company [凯迈（洛阳）气源有限公司]²²⁷
- CAMA Luoyang Measurement & Control Equipment Company [凯迈（洛阳）测控有限公司]²²⁸
- CAMA (Luoyang) Electronics Co., Ltd. [凯迈（洛阳）电子有限公司]
- CAMA (Luoyang) Aviation Protective Equipment Co., Ltd. [凯迈（洛阳）航空防护装备有限公司]

Key Personnel:

- Liu Daijun [刘代军]: Deputy CEO; Chief Technology Officer
- Bai Xiaodong [白晓东]: Deputy Chief Designer²²⁹

Equipment/Facilities:

- More than 10,000 sets of special instruments and equipment, advanced manufacturing capabilities, and mass production capabilities²³⁰

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List²³¹

4.1. CAMA (Luoyang) Aviation Protective Equipment Co., Ltd. [凯迈（洛阳）航空防护装备有限公司]

Notable Products/Services: aviation protection products, transportation equipment, environmental monitoring systems, precision machining, mechanical and electrical products

Immediate Parent Institution: China Airborne Missile Academy [中国空空导弹研究院]

Address: No. 18 Qianjing South Road, High-tech Industrial Development Zone, China (Henan) Pilot Free Trade Zone, Luoyang, Henan Province
[中国（河南）自由贸易试验区洛阳片区高新技术产业开发区浅井南路 18 号]²³²

Overview:

CAMA (Luoyang) Aviation Protective Equipment Co. develops and manufactures aviation protection products, as well as transportation equipment, constant temperature and humidity monitoring systems, precision machining, and mechanical and electrical products.²³³

4.2. CAMA (Luoyang) Gas Supply Co., Ltd. [凯迈（洛阳）气源有限公司]

Notable Products/Services: high-pressure containers, pneumatic control products

Immediate Parent Institution: China Airborne Missile Academy

Address: West Section of Lichun West Road, Luoyang, Henan Province
[河南省洛阳市丽春西路西段]²³⁴

Website: <http://www.camags.com.cn>

Key Data:

- Capital: 28.505 million RMB in registered capital
- Sales: 100 million RMB in annual sales income²³⁵

Overview:

CAMA (Luoyang) Gas Source works in the high-pressure air source and pneumatic control fields. It produces and sells high-pressure containers, pneumatic control devices, and integrated pneumatic control systems. The company is qualified to produce military products.²³⁶

4.3. CAMA (Luoyang) Electromechanic Co., Ltd. [凯迈（洛阳）机电有限公司]

Notable Products/Services: industrial machinery

Immediate Parent Institution: China Airborne Missile Academy

Address: No. 77 Lichun West Road, Jianxi District, China (Henan) Pilot Free Trade Zone, Luoyang, Henan Province [中国（河南）自由贸易试验区洛阳片区涧西区丽春西路 77 号]²³⁷

Website: <http://www.lynf.cn/>

Key Data:

- Established: 1 July 1999
- Capital: 46.37 million RMB
- Personnel: over 500 employees²³⁸

Overview:

CAMA (Luoyang) Electromechanical Co. works in the aviation industrial field, and claims advanced R&D capabilities. It appears to produce a range of industrial machinery, including SQ Series Pelletizing Systems, Vertical Underwater Pelletizers, Horizontal Underwater Pelletizers, Dry Pelletizers, Filament Casting Heads, Centrifugal Dryers, Vibrating Screens, Water Tanks, Air Knives, and Water Desalination Recirculation Systems.²³⁹ Photos on its website suggest its

products are utilized for both military aircraft and auto parts. Its products are exported to more than 20 countries and regions.²⁴⁰

4.4. CAMA (Luoyang) Electronics Co., Ltd. [凯迈（洛阳）电子有限公司]

Notable Products/Services: military and civil optoelectronic information technology

Immediate Parent Institution: China Airborne Missile Academy

Address: No. 16, Chuncheng Road, High-tech Zone, China (Henan) Pilot Free Trade Zone, Luoyang, Henan Province [中国（河南）自由贸易试验区洛阳片区高新区春城路16号]²⁴¹

Key Data:

- Floor Space: scientific research and production building of 15,000 sqm²⁴²

Overview:

CAMA (Luoyang) Electronics Co. produces military and civil optoelectronic information technology, focusing on development and production of software embedded electronic products and optical-mechanical integrated equipment in the fields of aviation, electric power, security, information security, and new energy.²⁴³

CAMA (Luoyang) Electronics Co., Ltd. is located in Zhuofei Science and Technology Park, Luoyang National High-tech Development Zone.

4.5. CAMA (Luoyang) Measurement and Control Equipment Co., Ltd. [凯迈（洛阳）测控有限公司]

Notable Products/Services: measurement and control technology, optoelectronic products, infrared imaging products, target recognition and tracking products, atmospheric monitoring technology, sensing technology, precision machinery

Immediate Parent Institution: China Airborne Missile Academy

Address: No. 18 Qianjing South Road, High-tech Industrial Development Zone, China (Henan) Pilot Free Trade Zone, Luoyang, Henan Province [中国（河南）自由贸易试验区洛阳片区高新技术产业开发区浅井南路18号]²⁴⁴

Overview:

CAMA (Luoyang) Measurement and Control develops measurement and control technology and optoelectronic products. It focuses on virtual instrument and system integration, infrared imaging, target recognition and tracking, atmospheric monitoring, sensing technology, and precision machinery. Products include comprehensive testing security equipment, infrared imaging products, intelligent temperature-controlled shock-absorbing chassis cabinets, new

energy super capacitors and power management systems, and atmospheric and meteorological environment monitoring systems.²⁴⁵

The company has a production base in Luoyang High-tech Development Zone, has its own research and development technology park in the city center, and has marketing offices and holding companies in Beijing and Shanghai.

5. Jiangxi Hongdu Aviation Industry Group Co., Ltd. [江西洪都航空工业集团有限责任公司]

Aliases and Other Names:

- Factory 320 [320 厂]
- Nanchang (Hongdu) Aircraft Manufacturing Co. [南昌(洪都)飞机制造公司]
- (Aviation Industry Jiangxi) Hongdu Aviation Industry Group (Limited Liability Company) [(航空工业江西)洪都航空工业集团(有限责任公司)]
- (AVIC) Hongdu (Aviation Industry Group) [洪都航空工业集团有限责任公司]
- Jiangxi Hongdu Aviation Ind. Group

Notable Products/Services: trainer aircraft, attack aircraft, agricultural and forestry aircraft, coastal defense products²⁴⁶

Immediate Parent Institution: AVIC²⁴⁷

Corporate Ownership:

- AVIC [中国航空工业集团公司] (81.30193%)
- CCB Financial Assets Investment Co., Ltd. [建信金融资产投资有限公司] (13.08865%)
- Beijing AVIC Phase I Aviation Industry Investment Fund (Limited Partnership) [北京中航一期航空工业产业投资基金（有限合伙）] (2.80471%)
- Shanghai Xinyin Haisi Investment Management Co., Ltd. [上海信银海丝投资管理有限公司] (2.80471%)²⁴⁸

Address: Aviation City, Nanchang High-tech Industrial Development Zone, Nanchang, Jiangxi Province [江西省南昌市南昌高新技术产业开发区航空城]²⁴⁹

Website: <https://www.hongdu.com.cn/> or <http://www.hongdu-aviation.com/> (latter apparently defunct)

Archived: <https://web.archive.org/web/20220815013334/https://www.hongdu.com.cn/>

Archived: <https://web.archive.org/web/20190408042416/http://www.hongdu-aviation.com:80/>

Key Data:

- Established: 1951

- Items produced: over 20 types of aircraft, has delivered over 5,000 aircraft
- Personnel: over 10,000 employees²⁵⁰

Overview:

The Jiangxi Hongdu Aviation Industry Group (HAIG), previously known as Nanchang Aircraft Manufacturing Company (NAMC), primarily produces trainer and attack aircraft.²⁵¹ It also produces agricultural and forestry aircraft, as well as coastal defense products.

Notable Applications:

- Q-5 attack aircraft²⁵²
- L-15 advanced trainer aircraft ²⁵³
- JL-10 advanced trainer and light combat aircraft²⁵⁴
- PT-6 basic trainer aircraft
- La-7/Yak-152K trainer aircraft²⁵⁵

Notable Collaborations:

Domestic:

- Shenyang Aircraft Design Institute²⁵⁶

International:

- Boeing
- Airbus
- Goodrich
- Eclipse²⁵⁷
- Yakovlev Design Bureau²⁵⁸

Known Subsidiaries:

- Nanchang Aircraft Design Institute [南昌飞机设计研究所]
- Nanchang Missile Design Institute [南昌导弹设计所]
- Jiangxi Hongdu International Electromechanical Co., Ltd. [江西洪都国际机电有限责任公司/洪都国际机电]²⁵⁹
- Jiangxi Changjiang General Aviation Co., Ltd. [江西长江通用航空有限公司/长江通用航空]²⁶⁰
- Jiangxi Hongdu Aviation Industry Co., Ltd. [江西洪都航空工业股份有限公司/洪都航空]
 - Listed company that appears to have the same name as the main company
- Hongdu Aviation [洪都航空] (600316)
 - Listed company that may be same as above

Key Personnel:

- Lu Xiaopeng [陆孝彭]: Academician, chief designer of the Q-5 aircraft
- Shi Ping [石屏]: Academician, chief designer of the K-8 aircraft²⁶¹
- Song Chengzhi [宋承志]²⁶²

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List²⁶³
- Present on U.S. Office of Foreign Asset Control Sanctions List²⁶⁴
- Present on U.S. Department of Defense Communist Chinese Military Companies List²⁶⁵

5.1. Nanchang Aircraft Design Institute [南昌飞机设计研究所]

Aliases and Former Names:

- 650 Institute [650 所]
- Hongdu Aircraft Design Institute [洪都飞机设计研究所]²⁶⁶

Notable Products/Services: combat and training aircraft

Immediate Parent Institution: Jiangxi Hongdu Aviation Industry Group Co., Ltd.²⁶⁷

Address: Qingyunpu Xinxu Bridge, Nanchang, Jiangxi Province 330024 [江西省南昌市青云谱新溪桥 330024]²⁶⁸

Key Data:

- Items produced: has developed over 12 types of aircraft and over 40 other models²⁶⁹

Overview:

The Nanchang Aircraft Design Institute has developed over 40 models of aircraft, including several models of training aircraft such as CJ-5, CJ-6, and L-15.²⁷⁰ It is one of the earliest aircraft design institutes in China and the earliest aircraft design institute with complete aircraft development capabilities.²⁷¹

Notable Applications:

Has contributed to multiple aircraft models, including:

- Q-5 combat aircraft
- J-12 combat aircraft
- CJ-5, CJ-6
- K-8/JL-8 trainer
- L-15 trainer²⁷²

Notable Collaborations:

- Nanchang Hangkong University [南昌航空大学]²⁷³

5.2. Nanchang Missile Design Institute [南昌导弹设计研究所]

Aliases and Former Names:

- 660 Institute [660 所]
- Hongdu Missile Design Institute [洪都导弹设计所]

Notable Products/Services: air-to-surface and coastal defense missile systems²⁷⁴

Immediate Parent Institution: Jiangxi Hongdu Aviation Industry Group Co., Ltd.

Address: None Found, likely Nanchang, Jiangxi Province [江西省南昌市]

Key Data:

- Established: 1960²⁷⁵
- Items produced: has delivered over 2,000 coastal defense missiles and nearly 1,000 air-to-surface missiles²⁷⁶
- Personnel: over 400 employees²⁷⁷

Overview:

The Nanchang Missile Design Institute is a research and development base for air-to-surface weapon systems. It was formerly known as the 40 Office [四零办公室] and was renamed to the 660 Design Institute in 1990. In 2000, it became the missile R&D center for the former AVIC II Corporation. Over more than 50 years, the Institute has successfully developed the Type 6 coastal defense missile, Type 2 air-to-surface missile, and Type 1 air-to-ship missile. It has delivered more than 2,000 coastal defense missiles and nearly 1,000 air-to-surface missiles.²⁷⁸

Notable Applications:

- SY-1, SY-2 [上游] anti-ship cruise missiles
- HY-series [海鹰] cruise missile²⁷⁹

Notable Collaborations:

- Nanchang Hangkong University [南昌航空大学]²⁸⁰

Key Personnel:

- Lu Jie [卢杰]: Deputy Director²⁸¹

Equipment/Facilities:

- 10 departments
- Hosts major optoelectronic and radio frequency laboratories.²⁸²

6. Shenyang Aircraft Design Institute [沈阳飞机设计研究所]

Aliases and other Names:

- 601 Institute [601 所]

Notable Products/Services: combat aircraft and UAV design, aviation technology

Immediate Parent Institution: AVIC²⁸³

Address: No. 40, Tawan Street, Huanggu District, Shenyang, Liaoning [辽宁沈阳市皇姑区塔湾街 40 号]²⁸⁴

Website: <http://www.sadri.avic.com/>

Archived: <https://web.archive.org/web/20200114040306/http://www.sadri.avic.com:80/>

Key Data:

- Established: 3 August 1961
- Capital: 2.8 million RMB in registered capital²⁸⁵
- Personnel: nearly 1,000 employees²⁸⁶

Overview:

The Shenyang Aircraft Design Institute (SADI/SADRI) engages in the design and development of combat aircraft and UAVs, as well as pre-research on aviation technology and provision of weapons and equipment for the PLA.²⁸⁷ SADI has been a major driver of Chinese innovations in fighter aircraft, including the J-11 and its derivatives. In recent years, SADI has pioneered advances in UAVs, avionics, composites, stealth, thrust vectoring, and other aerospace technologies.

SADI also serves as an academic institution, training master's and Ph.D. students in relevant fields.²⁸⁸ SADI's professional training covers 55 fields, including aircraft aerodynamics, structural strength, flight control, electromechanical systems, avionics, aircraft support, unmanned aerial vehicles, aviation product research and development, flight control, fuel systems, integrated electronic fire control, and full aircraft R&D.²⁸⁹

Notable Applications:

- J-8, J-11, J-15 combat aircraft ²⁹⁰
- Various UAVs and UCAVs, including Sharp Sword [利剑] UAV^{291 292}

Notable Collaborations:

Domestic:

- Collaborated with the Hongdu Aviation Industry Group on the Sharp Sword UAV.²⁹³

International:

- In 1991, China signed an agreement with Russian company Sukhoi to purchase Su-27 fighter jets. A subsequent agreement allowed SAC to build a licensed version of the jet.²⁹⁴

Known Subsidiaries:

- Yangzhou Collaborative Innovation Research Institute [扬州协同创新研究院]²⁹⁵
- Yingkou Hangsheng Technology Industry Co., Ltd. Shenyang Branch [营口航盛科技实业有限责任公司沈阳分公司]

Key Personnel:

- Fu Jiawei [富佳伟]: Deputy Chief Engineer; General Pneumatic Department Deputy Director [总体气动部副部长]
- Zhang Zijun [张子军]: Chief Designer²⁹⁶
- Li Tian [李天]: Chief Expert²⁹⁷

Equipment/Facilities:

- 25 professional laboratories which can conduct various physical experiments, simulation experiments, demonstration verification, and analysis research.²⁹⁸

6.1. Yangzhou Collaborative Innovation Research Institute [扬州协同创新研究院]

Aliases and Former Names:

- Shenyang Institute Yangzhou Institute [沈阳所扬州院]

Notable Products/Services: UAVs, airborne systems, other general aviation products

Immediate Parent Institution: Shenyang Aircraft Design Institute

Corporate Ownership: Shenyang Aircraft Design Institute [沈阳飞机设计研究所] (100%)²⁹⁹

Address: Building B, Building 28, Jiangsu Information Service Industry Base, Guangling New Town, Yangzhou, Jiangsu Province [江苏省扬州市广陵新城江苏信息服务产业基地内 28 号楼 B 栋]³⁰⁰

Website: Unknown

Key Data:

- Established: 2013
- Capital: 20 million RMB in registered capital³⁰¹
- Personnel: over 170 employees³⁰²

Overview:

The Yangzhou Collaborative Innovation Research Institute researches, develops, and produces UAV systems, as well as other general aviation products. These include airborne system design and production, software development, and military-civil fusion strategy research and consultation.³⁰³

The Institute is a wholly-owned subsidiary of the AVIC Shenyang Aircraft Design Institute. It was the first aircraft design institute established in the PRC, founded in August 1961. The Institute underwent a major restructuring in 2021.³⁰⁴ It was part of the first batch of enterprises to move into the new "Aviation Valley" development zone in Yangzhou in 2021.³⁰⁵

Key Personnel:

- Zuo Linxuan [左林玄]: Chairman
- Tao Xiaoyang [陶晓洋]: CEO³⁰⁶
- Sun Cong [孙聪]: Academician
- Wang Jun [王浚]: Academician³⁰⁷

6.2. Yingkou Hangsheng Technology Industry Co., Ltd. Shenyang Branch [营口航盛科技实业有限责任公司沈阳分公司]

Aliases and Former Names:

- Shenyang Aircraft Research Institute Powder Company (former)
- Shenfei Powder (former)

Notable Products/Services: pulverizers, classifiers, and pneumatic conveying for a variety of materials

Immediate Parent Institution: Shenyang Aircraft Design Institute

Address: No. 40-114, Tawan Street, Huanggu District, Shenyang, Liaoning Province [辽宁省沈阳市皇姑区塔湾街 40-114 号]³⁰⁸

Key Data:

- Established: 1985³⁰⁹

Overview:

Yingkou Hangsheng Technology Industry Co., Ltd. Shenyang Branch specializes in developing pulverizers, classifiers, and pneumatic conveying. Its products have been widely used in industries such as new materials, non-mineral materials, electronic materials, ceramics, chemicals, metal powders, toners, rare earths, grinding and polishing materials, and medicine.³¹⁰

Founded in 1985, Shenfei Powder led China's development of a fluidized bed jet mill and horizontal turbo classifier. Currently, it appears to be directly under the Shenyang Aircraft Design and Research Institute.

7. AVIC Shenyang Aircraft Industry Group Co., Ltd. [中国航空工业沈阳飞机工业集团有限公司]

Aliases and Former Names:

- Factory 112 [112 厂]
- (AVIC) Shenfei [(中航工业)沈飞]
- AVIC Shenyang Aircraft Company Limited [中航沈飞股份有限公司]
- AVIC Black Panther [中航黑豹]
- Dongan Heibao [东安黑豹] (former)
- AVIC Heibao [中航黑豹] (former)
- Shenyang Aircraft Corporation

Notable Products/Services: combat and military trainer aircraft, civilian aircraft, missiles

Immediate Parent Institution: AVIC³¹¹

Corporate Ownership: AVIC [中国航空工业集团公司] (68.62%)³¹²

Address: No. 1, Lingbei Street, Huanggu District, Shenyang, Liaoning Province [辽宁省沈阳市皇姑区陵北街 1 号]³¹³

Website: <https://www.sac.avic.com/>

Archived: <https://web.archive.org/web/20220815025546/https://www.sac.avic.com/>

Key Data:

- Established: 1951³¹⁴
- Personnel: nearly 15,000 employees³¹⁵
- Floor space: 3.9 million sqm³¹⁶

Overview:

The Shenyang Aircraft Co. (SAC) has been the primary developer of many J- series combat aircraft through its history. Recently, SAC developed and produced China's carrier-based J-15 aircraft, as well as its fifth-generation FC-31 stealth fighter.³¹⁷ SAC has also developed missiles such as the HQ-1 [红旗一号] surface-to-air missile.³¹⁸ Today, SAC is known as one of the birthplaces of Chinese aviation and the "cradle of Chinese fighter planes."³¹⁹

Notable Applications:

- J-5, J-6, J-7, J-8 and J-8 II, J-15, J-16, FC-31, J-35 fighter aircraft
- JJ-I, JJ-6, trainer aircraft
- C919, ARJ21, and Airbus A220 commercial aircraft
- Cessna 162 Skycatcher sport aircraft
- Hongqi-1 missile^{320 321 322 323 324}

Known Subsidiaries:

- AVIC Jilin Aviation Maintenance Co., Ltd [吉林航空维修有限责任公司]
- Shenyang Shenfei Enterprise Management Co., Ltd. [沈阳沈飞企业管理有限公司] (possibly directly under AVIC)³²⁵
 - AVIC (Shenyang) Investment Management Co., Ltd. [中航（沈阳）投资管理有限公司]³²⁶

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List³²⁷
- Present on U.S. Office of Foreign Asset Control Sanctions List³²⁸
- Present on U.S. Department of Defense Communist Chinese Military Companies List³²⁹

7.1. AVIC Jilin Aviation Maintenance Co., Ltd [吉林航空维修有限责任公司]

Aliases and Former Names:

- Factory 5704 [五七〇四厂]
- AVIC 5704th Factory [中国航空工业第一集团公司第五七〇四厂]

- State-owned Shuangji Machinery Factory [国营双吉机械厂]
- State-owned Shuangji Machinery Factory Electricity Meter Factory [国营双吉机械厂电表厂]³³⁰
- Jihang [吉航]³³¹

Notable Products/Services: repair of military and civil aircraft, repair of engines, airborne equipment, and accessories, manufacture of spare parts

Immediate Parent Institution: AVIC Shenyang Aircraft Industry Group Co., Ltd.

Corporate Ownership:

- Shenyang Shenfei Business Management Group [沈阳沈飞企业管理有限公司] (56.62361%)
- AVIC Shenyang Aircraft Industry Group Co., Ltd. [中国航空工业沈阳飞机工业集团有限公司] (43.37639%)³³²

Address: No. 20, Shuangji Street, Jilin Economic and Technological Development Zone, Jilin, Jilin Province [吉林省吉林市吉林经济技术开发区双吉街 20 号]³³³

Website: <http://www.jh5704.com/GYWM.aspx>

Key Data:

- Established: 1956³³⁴
- Capital: 260 million RMB in registered capital³³⁵
- Personnel: over 1,800 registered employees³³⁶
- Floor space: 1.75 million sqm³³⁷

Overview:

The AVIC Jilin Aviation Maintenance Co. (Jihang) specializes in the repair of military and civil aircraft, the repair of engines, airborne equipment, and accessories, and the manufacture of spare parts.³³⁸ The company's business includes military and civil aircraft and engines, airborne equipment, accessories for the Ministry of Aviation, related inspection and testing equipment, aviation spare parts, field support equipment, aviation life-saving equipment, naval equipment, naval aircraft technical support equipment, jet sweepers, explosion-proof electrical equipment, non-standard equipment development, airport management, aircraft dismantling. Beyond its core business, Jihang also has stakes in oil drilling equipment, machining, metal surface treatment and heat treatment, fixed assets leasing, and site leasing services, automobile sales, road cargo transportation; urban garbage cleaning, and snow cleaning services.³³⁹

Jihang was originally affiliated to the PLA Air Force. It was founded in 1956 and put into operation in 1958 as PLA Factory 5704. In 2001, it was placed under AVIC. In 2017, it became a subsidiary of AVIC Shenyang Aircraft Industry (Group) Co., Ltd.³⁴⁰

Notable Applications:

- Has repaired thousands of military aircraft of 36 types, including the J-6, J-7, J-8, Q-5, JH-7, and JL-8, and more than 100 general-purpose aircraft such as the M-18 and Y-1
- Has repaired tens of thousands of military aircraft engines, including WS-11 and AI-24³⁴¹

Notable Collaborations:

International

- Has built aircraft overhaul factories for Myanmar, Sudan, Bangladesh and Sri Lanka
- Has established a standard parts production lines for Pakistan
- Has overhauled nearly 100 military aircraft of various types for Laos, Zimbabwe, Myanmar, Sri Lanka, Bangladesh, Sudan and others³⁴²

Equipment/Facilities:

- Has 11 intelligent and aircraft assembly plants, and 11 first-line companies
- Has specialized machining, sheet metal manufacturing, and surface treatment capabilities³⁴³

8. Xi'an Aircraft Industry Group Co. Ltd. [中航西安飞机工业集团股份有限公司]

Aliases and Former Names:

- Factory 172 [172 厂] (former)
- Xi'an Aircraft Industry Corporation [中国航空工业西安飞机工业集团有限公司]
- Xifei Factory 172 [西飞 172 厂] (former)
- AVIC Xifei [航空工业西飞/中航西飞]
- Xi'an Aircraft International Aerospace Manufacturing Co. Ltd. [西安飞机国际航空制造股份有限公司] (former)
- AVIC Aircraft [中航飞机股份有限公司/中航飞机]³⁴⁴ (former)
- 西飞产业集团

Notable Products/Services: large and medium-sized military and civilian aircraft, aircraft parts

Immediate Parent Institution: AVIC³⁴⁵

Corporate Ownership:

- AVIC [中国航空工业集团公司] (38.18%)
- Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司] (10.95%)

- AVIC Investment Holdings Co., Ltd. [中航投资控股股份有限公司] (5.78%)
- China Securities Finance Corporation Limited [中国证券金融股份有限公司] (3.36%)
- Various other minority stakes³⁴⁶

Address: No. 1, Xifei Avenue, Yanliang District, Xi'an, Shaanxi Province [陕西省西安市阎良区西飞大道一号]³⁴⁷

Website: <https://www.xac.com.cn/>

Archived: <https://web.archive.org/web/20220523172500/https://www.xac.com.cn/>;

Former: https://web.archive.org/web/20181206123730/http://www.aircraft_co.avic.com/

Key Data:

- Established: 1958 (original),³⁴⁸ 1997 (current form)³⁴⁹
- Assets: 38 billion RMB in total assets³⁵⁰
- Personnel: 16,000 employees
- Floor space: 4 million sqm

Overview:

The Xi'an Aircraft Industry Corporation (XAC), first established in 1958 as Factory 172, is one of China's key aviation research and development (R&D) facilities and manufacturers.³⁵¹ The company produces a variety of large and medium-sized military and civilian aircraft, including the Y-7 and MA-series turboprop transport aircraft (based on the Antonov An-24), the JH-7 fighter-bomber, H-6 bomber series (based on the Tupolev Tu-16), and aircraft parts for both domestic and international airliners. Most recently it has been producing the Y-20 strategic transport jet (an indigenous design roughly comparable to the U.S. C-17).³⁵²

XAC was the first Chinese company to establish cooperative agreements with international corporations.³⁵³ XAC has partnered with, and built parts for, Boeing and Airbus since 1980 and 1997, respectively.³⁵⁴

Notable Applications:

- Y-7 and MA-series turboprop transport aircraft
- JH-7 fighter-bomber
- H-6 bomber series
- Y-20 strategic transport
- Design, manufacturing, and servicing for components of large and medium-size domestic and international civil aircraft, including the ARJ21, C919, and AG600^{355 356 357}

Notable Collaborations:

Domestic:

- China Aviation Industry General Aircraft (CAIGA)³⁵⁸

International:

- Airbus has had a partnership with XAC for over 20 years. XAC manufactures the wings for Airbus's A320 passenger aircraft, which are assembled at Airbus's Tianjin facility.³⁵⁹
- XAC has a longstanding collaboration with Boeing. It supplies vertical fins for the 737 commercial airliner, vertical fins and inboard flaps for the 737 MAX, and trailing edge wing ribs and inboard flaps for the 747-8.³⁶⁰

Known Subsidiaries:

- AVIC The First Aircraft Institute [中航工业第一飞机设计研究院]
- Shaanxi Aircraft Corporation [中航工业陕西飞机工业(集团)有限公司]
- AVIC Tianshui Aircraft Industry Co., Ltd. [中航天水飞机工业有限责任公司]
- Xi'an Aviation Brake Technology Co., Ltd. [西安航空制动科技有限公司]
- AVIC XAC Commercial Aircraft Co., Ltd. [中航西飞民用飞机有限责任公司]
- AVIC Landing-Gear Advanced Manufacturing Co., Ltd. [中航飞机起落架有限责任公司]
- Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司]
- AVIC Xifei [中航西飞] (listed version)

Key Personnel:

- Wu Zhipeng [吴志鹏]: Chairman; Party Secretary
- Song Kepu [宋科璞]: CEO; Deputy Party secretary³⁶¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List³⁶²
- Present on U.S. Department of Commerce Military End User List³⁶³
- Present on U.S. Office of Foreign Asset Control Sanctions List³⁶⁴
- Present on U.S. Department of Defense Communist Chinese Military Companies List³⁶⁵

8.1. Shaanxi Aircraft Industry Corporation [中航工业陕西飞机工业(集团)有限公司]

Aliases and Former Names:

- AVIC Shanfei [中航工业陕飞/陕飞]³⁶⁶
- Base 012 [012 基地] (former – a major part of this Base later became this company)³⁶⁷

Notable Products/Services: fixed-wing aircraft, special aircraft, UAVs, spare parts, as well as motor vehicle and medical equipment parts, aviation technology equipment, aircraft ground support equipment, aircraft modification and repair, aircraft leasing and service support³⁶⁸

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd.³⁶⁹

Corporate Ownership: Xi'an Aircraft Industry Group Co. Ltd. [中航西安飞机工业集团股份有限公司] (100%)³⁷⁰

Address: Building 8, North Yard, 012 Base, Laodong Road, Hantai District, Hanzhong, Shaanxi Province [陕西汉中市汉台区劳动路 012 基地北院 8 号楼]³⁷¹

Website: <https://www.saic.avic.com/>

Key Data:

- Established: 1964 (original form),³⁷² 2001 (current form)³⁷³
- Assets: 5 billion RMB in total assets
- Personnel: 10,000 employees
- Floor space: 3 million sqm³⁷⁴

Overview:

The Shaanxi Aircraft Industry Corporation (SAIC) is primarily involved in the development, manufacturing, sales and service of fixed-wing aircraft, special aircraft, and unmanned aerial vehicles. It is also involved in domestic and foreign aircraft parts processing and subcontracting, motor vehicle and medical equipment parts manufacturing, manufacturing of aviation technology equipment, aircraft ground support equipment, and civilian machinery and equipment, aircraft modification and repair, and aircraft leasing and service support.³⁷⁵

The company was established in 1964 as part of the Third Line [三线] strategy, whose goal was to build a more secure defense industry in the interior of China. Design work on the Y-8 began in 1969 at Xi'an Aircraft Design and Research Institute [西安飞机设计研究所], and test flights of the first airframe began in December 1974.³⁷⁶ In 2001, Shaanxi Aircraft Corporation completed a comprehensive corporate transformation and became a large-scale group involved in aircraft manufacturing, large-scale process equipment manufacturing, construction and installation, transportation, business services, and other fields.³⁷⁷ By 2006, SAC had produced nearly 30 variants of the multi-role Y-8, which is employed by the PLA Army, Navy, and Air Force. Though typically described as indigenously developed, the Y-8 and Y-9 are based on the Soviet/Ukrainian An-12, and many improvements in recent years have benefited from partnership with Russia's Antonov, the original designer of the aircraft.³⁷⁸

Notable Applications:

- Y-8 and Y-9 medium transports series³⁷⁹

Notable Collaborations:

- In 2002, SAIC signed a joint development agreement with the Ukrainian aircraft manufacturer Antonov.³⁸⁰ After 40 crew members and scientists were killed in the crash of

a KJ-200 early warning aircraft on 3 June 2006, this relationship was apparently expanded, as Shaanxi partnered with Anotov to significantly improve the design of the aircraft.³⁸¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List³⁸²

8.2. AVIC The First Aircraft Institute [中航工业第一飞机设计研究院]

Aliases and Former Names:

- 603 Institute [603 所]
- AVIC Xi'an Aircraft Design and Research Institute [中国航空工业集团公司西安飞机设计研究所]³⁸³
- AVIC 1st Flight Institute [航空工业一飞院]
- AVIC Xi'an Aircraft Design and Research Institute [航空工业西安飞机设计研究所]³⁸⁴

Notable Products/Services: overall aircraft design, aircraft system integration, aircraft testing, flight testing, comprehensive support technology for combat aircraft, civil transport, and special-mission aircraft³⁸⁵

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd.³⁸⁶

Address: No. 1, Renmin East Road, Yanliang District, Xi'an, Shaanxi Province [陕西省西安市阎良区人民东路 1 号]³⁸⁷

Website: <http://www.avic1-fai.com>

Archived: <http://web.archive.org/web/20180916193503/http://www.avic1-fai.com:80/>

Key Data:

- Established: 7 November 1961³⁸⁸
- Personnel: 2,600 employees³⁸⁹

Overview:

The (rather awkwardly-named) AVIC The First Aircraft Institute (FAI) is the only enterprise in China capable of designing fighter-bomber, bomber, civilian, transport and special-mission aircraft under one roof.³⁹⁰

FAI conducts long-term aircraft model planning, demonstration, design, research, integration, testing, support, and scientific research management. It features an information-based design platform which uses digital design software to allow three-dimensional digital designs and electronic pre-assembly. This allows the Institute to utilize a collaborative design method to undertake research on multiple advanced military and civil aircraft as well as its other products.³⁹¹

Notable Applications:

- FAI played a key role in a number of important Chinese aircraft, including:
 - Y-7 and Y-20 transport aircraft
 - KJ-1 and KJ-2000 early warning aircraft
 - JH-7 combat aircraft
 - Kitty Hawk 500 [小鹰 500 飞机] light business jet
 - large transport aircraft Y-20³⁹²

Key Personnel:

- Chen Yijian [陈一坚]: Aircraft design and R&D team academician³⁹³
- Tang Changhong [唐长红]: Aircraft design and R&D team academician³⁹⁴

Equipment/Facilities:

- Key Laboratory of Aircraft Environmental Control of Shaanxi Province [陕西省飞行器环境控制重点实验室]³⁹⁵

8.3. AVIC Landing-Gear Advanced Manufacturing Co., Ltd. [中航飞机起落架有限责任公司]

Aliases and Former Names:

- Factory 572 [572 厂]

Notable Products/Services: aircraft landing gear components, aviation hydraulic components, aviation seals, ground equipment

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd. (probable)³⁹⁶

Corporate Ownership:

- AVIC [中国航空工业集团公司] (67.49802%)
- Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司] (31.7628%)
- Central South University Powder Metallurgy Engineering Research Center Co., Ltd. [中南大学粉末冶金工程研究中心有限公司]³⁹⁷

Address: No. 128, Baoliang West Road, Wangcheng County, Changsha, Hunan Province [湖南省长沙市望城县宝粮西路 128 号]³⁹⁸

Website: <http://www.lamc.avic.com/> or <http://www/lamc.com.cn> (both apparently defunct)

Archived: <https://web.archive.org/web/20201025160951/http://www.lamc.avic.com/>

Archived: <https://web.archive.org/web/20140814125421/http://www.lamc.com.cn/main.asp>

Key Data:

- Established: 2007³⁹⁹
- Assets: 2.5 billion RMB in total assets⁴⁰⁰
- Items produced: has developed over 500 kinds of civil hydraulic products⁴⁰¹
- Personnel: over 5,000 employees⁴⁰²
- Floor space: over 2 million sqm⁴⁰³

Overview:

The AVIC Aviation Landing Gear Co. (LAMC) is mainly engaged in R&D, design, manufacture, testing, and after-sales service of military and civilian aircraft landing gear systems, aircraft landing gear and hydraulic accessories, aviation seals, and other aircraft accessories and ground equipment.⁴⁰⁴ As the only specialized aircraft landing gear enterprise in China's aviation industry, the company primarily undertakes the development and production of fixed-wing and rotary-wing aircraft landing gear. It has been involved in a number of key projects developing aircraft landing gear components and aviation hydraulic components for AVIC's Shaanxi, Shenyang, Chengdu, Xi'an, Changhe, and Harbin subsidiaries.

In addition to landing gear, the company is a major producer of forklift cylinders and automobile turning mechanisms for Beiqi Foton, Beijing Hyundai, Shaanxi Automobile, Sinotruk, Hancha, Heli Baocha, Qingdao Tailifu, Dacham and other companies.⁴⁰⁵

The company was formed in October 2007 through the reorganization of the former Shaanxi Liaoyuan Aviation Machinery Manufacturing Co., Ltd. [陕西燎原航空机械制造公司] and Hunan Xiangling Machinery Factory [湖南湘陵机械厂] by the former National Defense Science, Technology and Industry Commission, in order to promote development of indigenous aircraft landing gear. The company is headquartered in Changsha, Jiangxi Province, and has production bases in Shaanxi, Hunan, and other places.

AVIC Aircraft Co., Ltd. Changsha Landing Gear Branch [中航飞机股份有限公司长沙起落架分公司] appears to be a separate but related entity.

Notable Applications:

The company has developed landing gear systems for the multiple aircraft, including:

- AG600 large amphibious aircraft
- Seagull-300 [海鸥 300] general-use aircraft
- Kitty Hawk-500 [小鹰 500]
- C919 aircraft⁴⁰⁶
- Y-8 series of aircraft⁴⁰⁷
- Various other UAVs and training aircraft

Notable Collaborations:*International:*

- Messier Dowty (now called Safran Landing Systems)
- Goodrich⁴⁰⁸

Known Subsidiaries:

- Xi'an Liaoyuan Hydraulic Co., Ltd. [西安燎原液压公司]⁴⁰⁹

Key Personnel:

- Yang Rujun [杨如军]: Chairman
- Zhao Limin [赵利民]: Vice Chairman

8.4. AVIC Tianshui Aircraft Industry Co., Ltd [中航天水飞机工业有限责任公司]

Aliases and Former Names:

- Tianfei [天飞]

Notable Products/Services: military aircraft and helicopter repair and maintenance

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd.⁴¹⁰

Corporate Ownership: Xi'an Aircraft Industry Group Co. Ltd. [中航西安飞机工业集团股份有限公司] (100%)⁴¹¹

Address: No. 45, West Huanu Road, Nianpu Industrial Park, Economic and Technological Development Zone, Tianshui, Gansu Province [甘肃省天水市经济技术开发区甘铺工业园区花牛路西 45 号]⁴¹²

Website: www.tsplane.com

Key Data:

- Established: 1976
- Capital: 90 million RMB in registered capital⁴¹³
- Items produced: overhauled over 1,500 aircraft by 2015
- Personnel: 1,100 employees
- Floor space: 186,667 sqm⁴¹⁴

Overview:

AVIC Tianshui Aircraft Industry Co. (Tianfei) is an aircraft manufacturing and maintenance company. Per its company profile, it is the only fighter and trainer aircraft overhaul factory west of the Beijing-Guangzhou line with “strong comprehensive repair capabilities.” Its aircraft maintenance business includes complete and auxiliary repair of fighter jets and trainers (including centralized repair of certain types of aircraft materials). It has also been designated as a helicopter repair base for Northwest China by AVIC.

AVIC Tianfei was originally affiliated with the PLA Air Force Equipment Department before being resubordinated to AVIC. Tianfei Since December 2020, Tianfei has been a subsidiary of AVIC Xi'an Aircraft Industry Group Co., Ltd. (XAC).⁴¹⁵

Notable Applications:

- Aircraft hatches and other accessories for the ARJ series of civil regional airliners
- Development/trial production of the hatches of the Kunlong-600 amphibious aircraft⁴¹⁶

Notable Collaborations:

- Has signed a cooperation agreement with the Lanzhou Institute of Technology.⁴¹⁷

Key Personnel:

- Peng Gang [彭刚]: Chairman
- Tian Weijun [田维军]: Director; CEO⁴¹⁸

8.5. AVIC XAC Commercial Aircraft Co., Ltd. [中航西飞民用飞机有限责任公司]

Aliases and Former Names:

- Xifei Commercial [西飞民用]
- AVIC Xifei Commercial Aircraft [航空工业西飞民机]

Notable Products/Services: civil aircraft R&D, assembly, and services⁴¹⁹

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd.⁴²⁰

Corporate Ownership:

- Xi'an Industrial Investment Group [西安工业投资集团有限公司]
- Xi'an Aircraft Assets Management Co., Ltd. [西安飞机资产管理有限公司]
- Xi'an Aircraft Industry Group Co. Ltd. [中航西安飞机工业集团股份有限公司]

- Shaanxi Aviation Industrial Development Co. [陕西航空产业发展集团有限公司]
- AVIC [中国航空工业集团公司]
- AVIC Aerospace Systems [中航机载系统有限公司]
- Beijing Yanyun Industrial Company [北京凯迪克投资管理]
- AVIC International [中国航空技术国际控股有限公司] (unknown percentages)⁴²¹

Address: 88 Lantian St., Yaoliang District, Xi'an, Shaanxi Province [陕西省西安市阎良区蓝天路 88 号]⁴²²

Website: <https://www.xcac.com.cn/>

Archived: <https://web.archive.org/web/20221122211654/https://www.xcac.com.cn/index.shtml>

English: <https://web.archive.org/web/20210516120802/http://www.xcac.avic.com/xfen/>

Key Data:

- Established: 2015⁴²³
- Personnel: between 1,000 and 5,000 employees⁴²⁴
- Items Produced: has delivered over 100 aircraft, which operate nearly 300 routes in 19 countries on 4 continents and have transported over 12 million passengers in total⁴²⁵

Overview:

AVIC XAC Commercial Aircraft is a civil aircraft manufacturer whose business includes civil aircraft research and development, assembly and integration, marketing and user training, and customer support. The company's current main products include the MA60 and MA600 series aircraft, as well as multi-purpose aircraft based on these platforms such as cloud seeders, civil cargo aircraft, medical ambulance aircraft, and remote sensing aircraft.⁴²⁶

Notable Applications:

- MA-series turboprop regional aircraft⁴²⁷

Key Personnel:

- Wu Zhipeng [吴志鹏]: Chairman
- Wang Chengkuan [王程宽]: CEO
- Zheng Tao [郑涛]: Party Secretary⁴²⁸

8.6. Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司]

Aliases and Former Names:

- AVIC Aircraft Co., Ltd. [中航飞机有限责任公司]

Notable Products/Services: aircraft enterprise investment and management, sales, technology transfer, services related to aircraft landing gear and other parts

Immediate Parent Institution: Xi'an Aircraft Industry Group Co. Ltd.

Address: No. 48, Startup Square, Keji Road, High-tech Industrial Development Zone, Xi'an, Shaanxi Province [陕西省西安市高新区产业开发区科技路 48 号创业广场]⁴²⁹

Overview:

Xi'an Aircraft Asset Management Co., Ltd. is an XAC subsidiary involved in investment and management of large and medium-sized aircraft enterprises, sales of transport aircraft, passenger aircraft and special aircraft, and basic research and technology transfer of large aircraft technology, as well as research and development, design, manufacturing, sales, and service of aircraft landing gear and passenger aircraft parts, aviation technology development and services, and imports and exports.⁴³⁰

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List⁴³¹

8.6.1. XI'AN AVIATION BRAKE TECHNOLOGY CO., LTD. [西安航空制动科技有限公司]

Aliases and Former Names:

- Factory 514 [五一四厂]
- AVIC Brake [航空职业制动]

Notable Products/Services: aviation wheels, brake systems, hydraulic and pneumatic products⁴³²

Immediate Parent Institution: Xi'an Aircraft Asset Management Co., Ltd.⁴³³

Corporate Ownership: Xi'an Aircraft Asset Management Co., Ltd. [西安飞机资产管理有限公司] (100%)⁴³⁴

Address: No. 5, Keji 7th Road, High-tech Zone, Xi'an, Shaanxi Province [陕西省西安市高新区科技七路 5 号]⁴³⁵

Website: <http://www.xbc514.com/>

Key Data:

- Established: 1955⁴³⁶
- Items produced: 160 effectively authorized patents, over 240 accepted patents
- Personnel: 4,000 employees, including over 2,000 professional and technical personnel of various types, and over 200 technicians and senior technicians
- Floor space: 1.226 million sqm⁴³⁷

Overview:

AVIC Xi'an Aviation Brake Technology Co., Ltd. (AVIC Brake) provides R&D and production of aviation products, including wheels, brake systems, and hydraulic and pneumatic components. AVIC Brake is involved in the production of brake systems for all of China's military aircraft and most of its civil aircraft, holding a 90% domestic market share in the production of aircraft wheel brakes.⁴³⁸

Product lines include sequential crystallization technology for large magnesium castings, isothermal precision forged aluminum alloy wheels, carbon and ceramic brake materials, electronic anti-skid braking systems, digital telescopic anti-skid braking systems, all-electric braking systems, anti-skid braking systems, and electromechanical hydraulic accessories⁴³⁹

Established in 1955, AVIC Brake was one of the 156 key construction projects during China's First Five-Year Plan. In 2012, the company's aviation business was integrated and listed as Xi'an Brake Branch under AVIC Aircraft (now called Xi'an Aviation Industry Co.). The company's R&D center is located in Xi'an High-tech Zone, Shaanxi Province, and the production test bases are located in Xingping City, Shaanxi Province and Anshun City, Guizhou Province.

Notable Collaborations:

International:

- Xi'an Brake undertakes maintenance of civil aircraft wheel brakes and pneumatic and hydraulic accessories for more than 20 models and over 180 parts of Airbus, Boeing, Bombardier, and Xinzhou aircraft.
- The company has "good cooperative relations" with UTC (USA), Safran (France), and Dunlop (UK).⁴⁴⁰ The Safran subsidiary Safran Landing Systems supports AVIC Brake in designing and producing the MA700 wheel and brake systems.⁴⁴¹

Known Subsidiaries:

- AVIC Brake has branches in Beijing, Shanghai, Chengdu, Shenyang, Urumqi, Anshun and other places.⁴⁴²

HELICOPTERS

AVIC produces essentially all of China's domestic military and civil helicopters via its subsidiaries. Today, its numerous helicopter lines appear to be owned by AviChina, a kind of co-equal holding company for AVIC, while their operational subordination is unclear (either being under AVIC itself or AviChina).^{xii} In addition to helicopters, AviChina also oversees companies and research institutions responsible for aircraft design, trainer aircraft, civil aircraft, aviation services, and aviation systems and components.

9. AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司]

Aliases and Former Names:

- AviChina [中航科工]

Notable Products/Services: helicopters, trainers, general aircraft, airborne systems and aviation components, aviation engineering services

Immediate Parent Institution: AVIC⁴⁴³

Corporate Ownership:

- AVIC (58.99%) [中国航空工业集团公司]
- H shares (Hong Kong stock exchange) holders [H 股股东] (37.77%)
- Tianjin Free Trade Zone Investment Co., Ltd. [天津保税区投资有限公司] (3.24%)⁴⁴⁴
- Airbus (5%)⁴⁴⁵

Address: Tower A, No. 14 Xiaoguangdongli, Chaoyang District, Beijing [北京市朝阳区安定门外小关东里 14 号 A 座]⁴⁴⁶

Website: <https://www.avichina.com/>

Archived: <https://web.archive.org/web/20221011181838/https://www.avichina.com/>

Key Data:

- Established: 2003⁴⁴⁷
- Assets: 77.1 billion RMB in total assets⁴⁴⁸

^{xii} This points to a larger issue in AVIC's organizational and ownership structure, namely that it appears possible that entities can be owned or "controlled" in the sense of another entity having a controlling stake [控股] by one entity, but be functionally subordinated to another (with "management in trust [托管] being a special case of this).

Overview:

AviChina's main business covers helicopters, trainers, general aircraft, airborne systems and aviation components, and aviation engineering services. It is China's largest domestic helicopter manufacturer via its subsidiaries, with products covering 1-ton, 2-ton, 4-ton, 7-ton, and 13-ton helicopters, including the Z-8, Z-9, and Z-11 series of military helicopters. The company also describes itself as a leading manufacturer of advanced, intermediate, and basic trainer aircraft.⁴⁴⁹ In addition, AviChina supplies avionics systems and equipment for PRC military aircraft. It also develops and produces electromechanical equipment such as various aviation power systems (including power distribution, secondary power supplies, generators and controllers, circuit breakers), fire-fighting systems, environmental control systems (including sensitive components and sensors), engine ignition systems and accessories, etc., for aerospace, high-speed rail, and the naval, weaponry, and nuclear fields.⁴⁵⁰

The company manages tens of billions of military-civilian general funds in the aviation industry. It carries out equity investments in the military and civilian fields, with the aim of accelerating development of the industry. It's unclear to what extent the company directly manages and operates the organization it has investments in as opposed to merely owns the stock of these entities, which might be managed or operated by others. AviChina's main R&D and production bases are in Harbin, Nanchang, and Jingdezhen.⁴⁵¹

Notable Applications:

- Z-8 series multirole helicopter
- Z-9 series utility helicopter
- Z-11 series utility helicopter

Known Subsidiaries:

- Avicopter [中航直升机股份有限公司]
- AviChina Hong Kong [中航科工香港]
- AviChina Capital [上海航投]
- AVIC Rongfu Fund Management Co. Ltd. (military-civil integration fund)
- Harbin Aviation Industry (Group) Co., Ltd. [哈尔滨航空工业集团/哈尔滨航空工业(集团)有限公司/哈航集团]⁴⁵²
- AVIC Harbin Bearing [哈尔滨中航科工轴承有限公司(中航科工)]⁴⁵³
 - Aka China Aviation Development Harbin Bearing Co., Ltd. / Harbin AVIC Bearing Co Ltd / AviChina Harbin Bearing / AvicChina Harbin Bearing Co., Ltd⁴⁵⁴
 - Present on U.S. Department of Commerce Entity List⁴⁵⁵

Key Personnel:

- Wang Xuejun [王学军]: Chairman; Executive Director⁴⁵⁶

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List⁴⁵⁷

9.1. Avicopter [中航直升机股份有限公司]

Aliases and Former Names:

- Avicopter Shares [中直股份]
- AVIC Helicopter Co. LTD.

Notable Products/Services: military and civilian helicopters, small utility aircraft⁴⁵⁸

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁴⁵⁹ / AVIC (possibly)

Corporate Ownership: AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)⁴⁶⁰

Address:

- No. 39 Konggang EEZ Center Ave., Binhai New District, Tianjin [天津滨海新区空港经济区中心大道 39 号]⁴⁶¹
- 7th Floor, Block A, No. 14 Xiaoguangdongli, Outside Andingmen, Chaoyang District, Beijing [北京市朝阳区安定门外小关东里 14 号 A 座 7 层]⁴⁶²
- Building 34, Centralized Development Zone, Nangang District, Harbin, Heilongjiang Province [黑龙江省哈尔滨市南岗区集中开发区 34 号楼]⁴⁶³

Website: <http://avicopter.avic.com/>

Archived: <http://web.archive.org/web/20220125162039/http://avicopter.avic.com/index.shtml>

Key Data:

- Capital: 8 billion RMB in registered capital
- Assets: 48 billion RMB in total assets
- Personnel: approximately 19,100 employees (2019)⁴⁶⁴

Overview:

Avicopter produces AVIC's military and civilian helicopters, including the Z-8, Z-9, and Z-11 military helicopters (via its former Changfei subsidiary), and the AC-series of civilian helicopters.⁴⁶⁵ It also produces a number of small utility aircraft such as the Y-12 (via its former Hafei subsidiary).⁴⁶⁶

Avicopter was established in 1999, and restructured into its current form, as a joint venture under both AVIC and the Tianjin municipal government, in 2009.⁴⁶⁷ Its main operations base is located in Tianjin, while its office HQ is in Beijing. It also has a presence in Harbin, Jingdezhen, and Baojing.⁴⁶⁸ As part of its 2009 reorganization agreement, the Tianjin government agreed to prioritize purchase of Avicopter helicopters, and Avicopter will develop an export-driven enterprise in Tianjin. This new enterprise will be centered in Tianjin, with secondary locations in Harbin, Jingdezhen, and Baoding.⁴⁶⁹

Avicopter has faced further major restructuring in recent years. It previously oversaw Harbin Hafei Aviation Industry Co., Ltd. [哈尔滨哈飞航空工业有限责任公司], Jiangxi Changhe Aviation Industry Co., Ltd. [江西昌河航空工业有限公司], the China Helicopter Research and Design Institute [中国直升机设计研究所] and Huiyang Aviation Propeller Co., Ltd. [惠阳航空螺旋桨有限责任公司], but the former three appear to have become independent, directly-subordinate entities [直属业务单位] of AVIC around 2019, while the latter has moved to AVIC Aerospace System [中航机载系统有限公司]. At the same time, it appears to have ceased to be a directly-subordinate entity [直属单位] of AVIC, and its current status and subordination is unclear.

Notable Applications:

- Z-8 military helicopter
- Z-9 military helicopter
- Z-11 military helicopter (via its then-subsidiary Changfei)
- AC-series of civilian helicopters
- Y-12 small utility aircraft⁴⁷⁰

Notable Collaborations:

International:

- In 2016, Avicopter signed a joint agreement with Rostec's Russian Helicopters to develop the Advanced Heavy Lift (AHL) helicopter.⁴⁷¹
- In 2014, Avicopter and Airbus Helicopters signed an agreement to produce 1,000 new generation EC175/AC352 rotorcraft.⁴⁷²
- In 2018, AVICOPTER signed an agreement with French company Thales to establish a joint helicopter pilot training center.⁴⁷³
- As of 2015, Avicopter had participated in HELI-EXPO, a US-based helicopter expo, for three consecutive years. It is unclear if they are still participating.⁴⁷⁴

Known Subsidiaries:

- Tianjin AVIC Jinjiang Aviation Maintenance Engineering Co., Ltd. [天津中航锦江航空维修工程有限责任公司]
- Tianjin Binjiang Helicopter Co., Ltd. [天津滨江直升机有限责任公司]
- Tianjin Feilong Investment Holding Co., Ltd. [天津飞龙投资控股有限公司]⁴⁷⁵
- Avicopter Co., Ltd. [中航直升机有限责任公司/中直有限]^{476xiii}
 - This additionally may have been the original incarnation of Avicopter

Key Personnel:

- Wang Xuejun [王学军]: Chairman
- Gan Liwei [甘立伟]: CEO

^{xiii} Avicopter Co., Ltd. [中航直升机有限责任公司 or 中直有限] is not the same company as Avicopter Shares Co., Ltd. [中航直升机股份有限公司 or 中直股份].

- Fan Youcheng [范有成]: Deputy CEO
- Zhang Yinsheng [张银生]: Deputy CEO
- Liu Bing [刘秉]: Deputy CEO⁴⁷⁷

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List⁴⁷⁸

9.1.1. TIANJIN AVIC JINJIANG AVIATION MAINTENANCE ENGINEERING CO., LTD. [天津中航锦江航空维修工程有限责任公司]

Aliases and Former Names:

- Jinjiang Maintenance [锦江维修]

Notable Products/Services: maintenance for helicopters, aircraft, engines, industrial automation control equipment, avionics and airborne auxiliary equipment, maintainability and reliability testing, aircraft maintenance, import and export services

Immediate Parent Company: Avicopter⁴⁷⁹

Corporate Ownership:

- AVIC Harbin Aircraft Industry Group Co., Ltd. [中国航空工业哈尔滨飞机工业集团有限公司] (51%)
- Chengdu State-owned Jinjiang Machinery Factory [成都国营锦江机器厂] (49%)⁴⁸⁰

Address: Factory 101, No. 8 Gangcheng Avenue, Tianjin Airport Economic Zone, Tianjin [天津空港经济区港城大道 8 号 101 厂房]⁴⁸¹

Key Data:

- Established: 2013
- Capital: 60 million RMB in registered capital
- Personnel: 100-199⁴⁸²

Overview:

Tianjin AVIC Jinjiang Aviation Maintenance Engineering Co. works in the fields of maintenance and modification of whole aircraft, engines, and accessories. It is also engaged in the development and maintenance of industrial automation control equipment, avionics and airborne auxiliary equipment, maintainability and reliability testing, aircraft maintenance import and export, and related technical consultation and services.⁴⁸³

It was established in 2013 in response to the military-civilian integration development requirements put forward by the Central Military Commission, to improve military maintenance capacity maintenance and support capabilities for military helicopters. It was proposed by the PLA

Air Force Equipment Department, Army Aviation Department, and the former General Staff Department, and approved by the former General Armaments Department and Avicopter. It is China's first military-civilian integrated, wholly state-owned enterprise specializing in helicopter maintenance and equipment maintenance.⁴⁸⁴

AVIC Jinjiang's construction was jointly funded by Avicopter and Chengdu State-owned Jinjiang Machinery Factory, and its inauguration was attended by the head of the PLA AF.⁴⁸⁵

Key Personnel:

- Ma Dequan [马德权]: Chairman
- Chen Haijian [陈海牛]: Vice Chairman
- Yao Huailiang [姚怀亮]: CEO⁴⁸⁶

9.1.2. TIANJIN BINJIANG HELICOPTER CO., LTD. [天津滨江直升机有限责任公司]

Notable Products/Services: civil aircraft engines, propellers, and other parts, civil aircraft maintenance, civil aircraft pilot training

Immediate Parent Institution: Avicopter⁴⁸⁷

Corporate Ownership:

- AVIC [中国航空工业集团公司] (68.75%)
- Tianjin Free Trade Zone Investment Holding Group [天津保税区投资有限公司] (31.25%)⁴⁸⁸

Address: No. 39, Central Avenue, Tianjin Pilot Free Trade Zone (Airport Economic Zone) [天津自贸试验区（空港经济区）中心大道 39 号]⁴⁸⁹

Key Data:

- Established: 2019
- Capital: 200 million RMB in registered capital⁴⁹⁰

Overview:

Tianjin Binjiang Helicopter Co., Ltd., established in 2019 as a spin-off of Avicopter,⁴⁹¹ produces civil aircraft engines, propellers, and other parts, as well as conducting civil aircraft maintenance, civil aircraft pilot training, aircraft custodian operations, import and export of goods, technology import and export, and other services.⁴⁹²

9.2. Changhe Aircraft Industries (Group) Co., Ltd. [昌河飞机工业(集团)有限责任公司]

Aliases and Former Names:

- Factory 372 [372 厂]
- Changfei [昌飞]
- Changhe Aircraft Industries Group

Notable Products/Services: military and civilian helicopters

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁴⁹³ (may move to Avicopter [中航直升机股份有限公司] after the latter's purchase of it is complete)⁴⁹⁴ / AVIC⁴⁹⁵

Corporate Ownership: Avicopter [中航直升机股份有限公司] (100%);⁴⁹⁶ AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)⁴⁹⁷ (former)

Address: No. 539, Chaoyang Road, Zhushan District, Jingdezhen, Jiangxi Province [江西省景德镇市珠山区朝阳路 539 号]⁴⁹⁸

Website: <https://www.changhe.com/>

Archived: <https://web.archive.org/web/20220815013356/https://www.changhe.com/>

Key Data:

- Established: 1969⁴⁹⁹
- Asset: 21.9 billion RMB in total assets
- Personnel: over 6,000 employees⁵⁰⁰

Overview:

The Changhe Aircraft Industries Co. (CAIC) produces both military and civil helicopters, including the Z-8, Z-10, Z-11, AC310, AC311, and AC313. Changhe has also coordinated with several domestic and foreign companies, such as Sikorsky, Boeing, Leonardo, and COMAC to manufacture components and share technology.⁵⁰¹

Notable Applications:

- Z-8, Z-10, Z-11 military helicopters
- AC310, AC311, AC313 civil helicopters⁵⁰²

Notable Collaborations:

Domestic:

- COMAC

International:

- Sikorsky
- Boeing
- Leonardo⁵⁰³

Key Personnel:

- Xu Depeng [徐德朋]: Chairman; Party Secretary
- Zhou Guochen [周国臣]: CEO; Deputy Party Secretary
- Hu Shiwei [胡世伟]: Deputy Party Secretary; Head of Discipline Inspection Committee⁵⁰⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List⁵⁰⁵

9.3. China Helicopter Research and Design Institute [中国直升机设计研究所]

Aliases and Former Names:

- 602 Institute [602 所]
- AVIC Helicopter Design Institute [中航工业直升机设计研究所]
- Avicopter R&D Center [中航直升机有限责任公司研发中心]

Notable Products/Services: helicopter and UAV designs

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁵⁰⁶ / AVIC⁵⁰⁷

Address: No. 6-8 Hangkong Road, Zhushan District, Jingdezhen, Jiangxi Province [江西省景德镇市珠山区航空路 6-8 号]; No. 35, Airport Center Avenue, Binhai New Area, Tianjin [天津市滨海新区空港中心大道 35 号]⁵⁰⁸

Website: <https://chrdi.avic.com/> or <http://www.602.com.cn/>

Archived: <https://web.archive.org/web/20220815013346/https://chrdi.avic.com/>

Key Data:

- Established: December 1969⁵⁰⁹
- Personnel: at least 3,000 employees⁵¹⁰

Overview:

The Chinese Helicopter Research and Development Institute (CHRDI), sometimes labeled the “cradle of Chinese helicopters,” has participated in the design and production of more than 12 helicopters and UAVs (including over 50 variants) since 2004. It works closely with Avicopter.⁵¹¹

CHRDI is tasked with developing substitutes for foreign technologies. In 2018, CHRDI developed a conformal aerial antenna that could be used on multiple military and civilian types, replacing a technology that China had hitherto relied on foreign imports for.⁵¹²

The Institute was founded in December 1969, and is now a part of AVIC. Over the course of 2017, CHRDI performed flight tests of the AV500, AV500W, and XM20 drones in Gansu and Qinghai provinces. The AV500W “War Wolf” [“战狼”] is an armed variant that can be equipped with small laser-guided missiles or machine guns and has a maximum speed of 170 kilometers per hour and an endurance of four hours.⁵¹³ This trial flight also helped to advance the AV500W’s capabilities for future wars, execute counterterrorism tasks, and counter drug trafficking. The XM20 is a lighter quad-copter configuration meant to provide tactical ISR.⁵¹⁴

Notable Applications:

Has contributed to multiple models, including:

- Z-8, Z-9, Z-10, Z-11, Z-19 helicopters
- AV500, AV500W, XM20 drones
- AC313 civilian helicopter
- AC311 general-purpose helicopter
- AC352 civilian utility helicopter⁵¹⁵

Notable Collaborations:

- Jointly runs the Defense S&T Key Laboratory of Helicopter Rotor Dynamics [直升机旋翼动力学国防科技重点实验室] with Nanjing University of Aeronautics and Astronautics (NUAA).
 - This lab has likely been involved in the research and design of many if not all of the PLA’s military helicopters of the past 25 years.⁵¹⁶
 - NUAA also held a discussion with CHRDI on strengthening scientific research cooperation, personnel training, and promoting comprehensive strategic cooperation on 30 October 2019.⁵¹⁷
- Delegates from Tsinghua University [清华], University of Science and Technology of China [中科大], Beihang University [北航], Zhejiang University [浙大], Harbin Institute of Technology [哈工大], Chongqing University [重庆大学], Tianjin University [天津大学] and other institutions of higher learning participated in a CHRDI open house event in 2019.⁵¹⁸

Known Subsidiaries:⁵¹⁹

- Jingdezhen Helicopter Base / Jingdezhen Helicopter R&D Branch [景德镇直升机基地/景德镇直升机研发分公司]
- Tianjin Helicopter R&D Center [天津直升机研发中心]

Key Personnel:

- Zhang Jianlong [张剑龙]: Director⁵²⁰

- Deng Jinghui [邓景辉]: Chief Designer⁵²¹
- Hao Zhaoping [郝照平]: Deputy CEO⁵²²
- Wu Zhixiang [吴智翔]: Aviation Industry Safety Director [航空工业安全总监]; Quality and Safety Department Head [质量安全部部长]⁵²³

Equipment/Facilities:

- Design test system and test flight base in Tianjin and Jingdezhen [景德镇]
- More than 20 helicopter research laboratories for overall aerodynamics, structural strength, rotor transmission, avionics, flight control, comprehensive testing, civil aircraft airworthiness, material standards, and others⁵²⁴

9.4. AVIC Harbin Aircraft Industry Group Co., Ltd. [中国航空工业哈尔滨飞机工业集团有限公司]

Aliases and Former Names:

- Factory 122 [122 厂]
- Hafei [哈飞]
- Hafei Factory 122 [哈飞 122 厂]
- Harbin General Aircraft Industry Co.
- Harbin Hafei Aviation Industry Co. Ltd.

Notable Products/Services: military and civil helicopters, light transport aircraft, aircraft parts

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁵²⁵ (may move to Avicopter [中航直升机股份有限公司] after the latter's purchase of it is complete)⁵²⁶ / AVIC⁵²⁷

Corporate Ownership: Avicopter [中航直升机股份有限公司] (100%);⁵²⁸ AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)⁵²⁹ (former)

Address:

- 15 Youxie Street, Pingfang District, Harbin, Heilongjiang Province [黑龙江省哈尔滨市平房区友协大街 15 号]⁵³⁰
- Nancheng 2nd Road, Hanan Industrial New City, Harbin [哈尔滨哈南工业新城南城二路]⁵³¹

Website: <https://www.hafei.com/>

Archived: <https://web.archive.org/web/20220815013401/https://www.hafei.com/>

Key Data:

- Established: 1952⁵³²
- Assets: 17.5 billion RMB in total assets
- Personnel: nearly 7,000 employees
- Floor space: 3.56 million sqm⁵³³

Overview:

The Harbin Aircraft Industry Group Co. (HAIG) is responsible for R&D and production of helicopters. HAIG (in an early incarnation) produced China's first helicopter Z-5, first light jet bomber H-5, and the first large waterborne anti-submarine bomber SH-5. It also produced the Z-9 and Z-19 series of helicopters and the AC312 and AC352 series of civilian helicopters. It has developed large parts of the C919 aircraft.⁵³⁴

HAIG also produces the Y-12 turboprop light transport currently used by the Chinese Coast Guard and PLA Air Force Airborne Corps, as well as civilian companies for domestic cargo transport.^{535 536} The Y-12 is a popular export and was recently purchased by Nepal.⁵³⁷

One of the earliest parts of China's aviation industry, HAIG was founded in 1952 as the No. 6 Main Aircraft Factory, Factory 122 [122 厂]. In the first 5-year plan, it was tasked with producing heavy bombers. The first Chinese H-6 entered service in 1959. Helicopters produced from Soviet-made kits followed, and in 1958 it conducted the first flight of a Chinese helicopter, the Z-5. This was followed by the Z-6 in 1969. Throughout the 1970s, Harbin continued to build medium and large fixed-wing aircraft based on Soviet designs including the H-5 bomber and SH-5 maritime patrol aircraft.⁵³⁸

Notable Applications:

- Z-5, Z-9, Z-19 military helicopters
- AC312, AC352 civil helicopters
- H-5 bomber aircraft
- SH-5 anti-submarine bomber
- Y-12 light transport
- Components of the C919 aircraft⁵³⁹
- BZK-005 UAV⁵⁴⁰

Notable Collaborations:

Domestic:

- Beihang University⁵⁴¹

International:

- Eurocopter⁵⁴²
- China has exported variants of the Z-9 to Bolivia, Cameroon, Ghana, Kenya, Laos, Mauritania, Namibia, and Pakistan.⁵⁴³

Known Subsidiaries:

- Harbin General Aircraft Industry Co. [哈尔滨通用飞机工业有限公司]⁵⁴⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List⁵⁴⁵
- Present on U.S. Department of Commerce Military End-User List⁵⁴⁶

9.5. Jingdezhen Helicopter R&D Branch [景德镇直升机研发分公司]

Aliases and Former Names:

- AviChina Jingdezhen Helicopter R&D Center [中国航空科技工业股份有限公司景德镇直升机研发中心] (former)⁵⁴⁷
- Jingdezhen Helicopter R&D Center (Manufacturing Center and UAV Center) [景德镇直升机研发中心（制造中心和无人机中心）]⁵⁴⁸
- Jingdezhen Helicopter Base [景德镇直升机基地] (likely)
- Jingdezhen Helicopter R&D and Production Base/Jingdezhen Helicopter R&D and Production Industrial Base [景德镇直升机研发生产基地/景德镇直升机研发生产产业基地]景德镇直升机研发生产基地/景德镇直升机研发生产产业基地] (likely)

Notable Products/Services: helicopters, aviation products such as aircraft parts and avionics⁵⁴⁹

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁵⁵⁰

Corporate Ownership: AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)⁵⁵¹

Address: No. 6-8 Hangkong Road, Jingcheng Town, Zhushan District, Jingdezhen, Jiangxi Province [江西省景德镇市珠山区航空路 6-8 号]⁵⁵²

Key Data:

- Established: 8 November 2005⁵⁵³

Overview:

The Jingdezhen Helicopter R&D Branch is responsible for design, R&D, production, and sales of helicopters, and other aviation products, aircraft parts and avionics products, and other mechanical and electronic equipment.

Very little information is available on this entity. It appears to still operate, but there are essentially no indications of its current status outside of corporate filings.⁵⁵⁴ It is owned by AviChina but located at the China Helicopter Research and Design Institute, which has a Jingdezhen Helicopter Base.^{555 556}

Notable Applications:

- U8 unmanned helicopter [U8 无人直升机]⁵⁵⁷

Key Personnel:

- Zhang Jianlong [张剑龙]: Legal representative⁵⁵⁸

9.6. China Aviation Planning and Design Institute Co., Ltd. [中国航空规划设计研究总院有限公司]

Aliases and Former Names:

- AVIC Planning [中航规划]
- AVIC Planning Institute [中航规划总院]
- Planning General Institute [规划总院]
- China Aviation Planning and Construction Development Co., Ltd. [中国航空规划建设发展有限公司] (former)⁵⁵⁹
- Design Office of the Aviation Industry Bureau of the Ministry of Heavy Industry [国家重工业部航空工业局设计处] (former)⁵⁶⁰

Notable Products/Services: large-scale aviation test equipment, aircraft and engine manufacturing⁵⁶¹

Immediate Parent Institution: AviChina Industry and Technology Co., Ltd.⁵⁶²

Corporate Ownership: AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)⁵⁶³

Address: No. 12, Dewai Street, Xicheng District, Beijing [北京市西城区德外大街 12 号]⁵⁶⁴

Website: <https://www.avic-apc.com/> or <https://www.avic-capdi.com/> or <http://www.中航规划.com/> (latter apparently defunct)

Archived: <https://web.archive.org/web/20220408060157/https://www.avic-apc.com/>

Archived: <https://web.archive.org/web/20220610130716/https://www.avic-capdi.com/>

Key Data:

- Established: 1951
- Personnel: approximately 4,000 employees⁵⁶⁵

Overview:

The China Aviation Planning and Design Institute (CAPDI) is a comprehensive survey and design unit for AVIC. It is engaged in aeronautical engineering planning, design, and construction of large-scale aviation test equipment, design of aircraft, engine manufacturing and maintenance engineering, production of survey and measurement technology, as well as the design and construction of civil aviation and municipal environmental engineering projects.⁵⁶⁶

CAPDI was formerly known as the Design Office of the Aviation Industry Bureau of the Ministry of Heavy Industry, which was established in 1951.

Known Subsidiaries:⁵⁶⁷

- China Aviation International Construction and Investment Co., Ltd. [中国航空国际建设投资有限公司]
- Aircraft Engineering Design and Research Institute [飞机工程设计研究院]
- AVIC CAPDI Integration Equipment Co., Ltd. [中航工程集成设备有限公司]
- Electronics Engineering Institute [电子工程设计研究院]
- AVIC CAPDI (Beijing) Technology Co., Ltd. [中航建发（北京）科技有限公司]
- AVIC Institute of Geotechnical Engineering Co., Ltd. [中航勘察设计研究院有限公司]
- Municipal Engineering Institute [市政工程设计研究院] (Fifth Academy [五院])
- Pharmaceutical Engineering Institute [医药工程设计研究院] (Ninth Academy [九院])
- Information Engineering Institute [信息工程研究院] (Tenth Academy [十院])
- Technology Research Institute [工程技术研究院] (Tech Academy [技术院])
- Environmental Protection and Safety Consulting Design Institute [环保与安全咨询设计研究院]
- Structural Engineering Innovation Institute [结构工程创新研究院] (aka AVIC CAPDI Innovation Academy [中航规划总院创新院])
- China Aviation Industry New Energy Investment Co., Ltd. [中国航空工业新能源投资有限公司]
- China Aviation Engineering Supervision (Beijing) Co., Ltd. [中航工程监理（北京）有限公司]
- AVIC CAPDI Engineering Consulting (Beijing) Co., Ltd. [中航工程咨询（北京）有限公司]
- AVIC Property Management Co., Ltd. Beijing Branch [北京中航物业管理有限责任公司]
- AVIC CAPDI (Macau) Company Limited
- Beijing Yinyan Enterprise Co., Ltd. [北京銀燕實業有限公司]⁵⁶⁸

Key Personnel:

- Lian Dawei [廉大为]: Chairman; Party Secretary
- Tang Kun [唐昆]: CEO; Deputy Party Secretary
- Xiong Tao [熊涛]: Deputy CEO; Deputy Party Secretary
- Shen Jinlong [沈金龙]: Chief Engineer

- Lin Wei [林伟]: Deputy CEO
- Deng Yindong [邓寅东]: Deputy CEO
- Xi Bao [息宝]: Chief Accountant; General Counsel
- Si Junpeng [司著鹏]: Discipline Inspection Commission Secretary⁵⁶⁹

Equipment/Facilities.⁵⁷⁰

- CAPDI has at least six divisions, including:
 - Aircraft Engineering Division
 - Aeronautical Engineering Division
 - Airborne Engineering Division
 - Civil Aviation and Civil Engineering Division
 - Survey and Geotechnical Engineering Division
 - Market Development Division
- Technology Development Center [技术发展中心]
- Aviation Capacity Building Research Center [航空能力建设研究中心]
- Smart Technology Center [智能技术中心]
- Eight direct business centers [八个直属业务中心]

9.6.1. AIRCRAFT ENGINEERING DESIGN AND RESEARCH INSTITUTE [飞机工程设计研究院]

Aliases and Former Names:

- CAPDI Second Academy [中航规划飞机院二院]⁵⁷¹
- (CAPDI) Aircraft Engineering Department [飞机工程事业部] (seemingly the same thing)⁵⁷²

Notable Products/Services: aircraft engineering and process design, military project consulting, large-span steel structures, special structure design⁵⁷³

Immediate Parent Institution: China Aviation Planning and Design Institute Co., Ltd.⁵⁷⁴

Address:

- Xicheng District, Beijing [北京市西城区]⁵⁷⁵
- No. 12, Dewai Street, Xicheng District, Beijing [北京市西城区德外大街 12 号] (same address as CAPDI)⁵⁷⁶

Key Data:

- Personnel: over 360⁵⁷⁷

Overview:

The Aircraft Engineering Design and Research Institute is engaged in aircraft engineering and process design, high-end consulting for military projects, large-span steel structures, oversized space air-conditioning technology, and special structure design. The Institute's services cover the whole value chain of planning, consulting, design, construction and post-maintenance. It works in the fields of aerospace, aviation manufacturing, medical care and pensions, firearms R&D and production, and military engineering.⁵⁷⁸

Key Personnel:

- E Yingnan [鄂颖男]: Party Secretary⁵⁷⁹

9.6.2. AVIC CAPDI (BEIJING) TECHNOLOGY CO., LTD. [中航建发（北京）科技有限公司]**Aliases and Former Names:**

- AVIC Construction and Development (Beijing) Technology Co., Ltd.
- AVIC C&D (Beijing) Technology Co., Ltd.

Notable Products/Services: technical services

Immediate Parent Institution: China Aviation Planning and Design Institute Co., Ltd.

Address: Room 302-304, 3rd Floor, Building 2, No. 12, Dewai Street, Xicheng District, Beijing [北京市西城区德胜门外大街 12 号 2 幢 3 层 302-304 室] (Part of CAPDI's campus)⁵⁸⁰

Overview:

AVIC CAPDI (Beijing) Technology provides various technical services, including technical promotion, technical consultation, and technical development, as well as property management.⁵⁸¹

Known Subsidiaries:

- AVIC Survey and Design Research Institute Co., Ltd. [中航勘察设计研究院有限公司]
- AVIC Changsha Design and Research Institute Co., Ltd. [中航长沙设计研究院有限公司]
- Beijing AVIC Property Management Co., Ltd. [北京中航物业管理有限责任公司]⁵⁸²

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List⁵⁸³

9.6.2.1. *China Aviation Changsha Design and Research Co., Ltd.* [中航长沙设计研究院有限公司]

Aliases and Former Names:

- Aviation Industry Changsha Institute [航空工业长沙院]⁵⁸⁴
- AVIC APC Changsha Design and Research Co., Ltd [中航规划建设长沙设计研究院有限公司]
- Changsha APC Engineering Co., Ltd [沙艾佩克工程有限公司] (former)
- Planning and construction sector of China Aviation Industry Corporation [中国航空工业集团公司规划建设板块] (former)⁵⁸⁵
- China Aviation Industry No.3 Design and Research Institute [中国航空工业第三设计研究院] (former)⁵⁸⁶

Notable Products/Services: consulting design, engineering assembly, equipment assembly⁵⁸⁷

Immediate Parent Institution: AVIC CAPDI (Beijing) Technology Co., Ltd.

Corporate Ownership: AVIC CAPDI (Beijing) Technology Co., Ltd. [中航建发（北京）科技有限公司] (100%)⁵⁸⁸

Address: No. 254 Xiangzhang Road, Yuhua District, Changsha City, Hunan Province [湖南省长沙市雨花区香樟路 254 号]⁵⁸⁹

Website: <http://www.avic-acs.com>

Key Data:

- Established: 1978
- Personnel: over 500 employees⁵⁹⁰

Overview:

The China Aviation Changsha Design and Research Co. (AVIC ACS) provides services for national defense and the military industry, industrial and civil construction, municipal engineering, civil aviation, and general aviation, both domestically and internationally.⁵⁹¹ It provides professional services for the defense, aerospace, weaponry, electronics, shipbuilding, nuclear, and other industries. It has provided support to the national "two machines" aero engine and gas turbine megaprojects.⁵⁹²

AVIC ACS was under China Aviation Planning and Design Institute (Group) Co., Ltd., but it appears to now be under AVIC CAPDI (Beijing) Technology Co., Ltd..⁵⁹³

Known Subsidiaries:

- Aeronautical Engineering Design and Research Institute (First Institute) [航空工程设计研究院(一院)]
- Civil Architecture Design and Research Institute (Second Institute) [民用建筑设计研究院(二院)]
- Urban Construction Design and Research Institute (Third Institute) [城镇建设设计研究院(三院)]⁵⁹⁴
- Sha Xinghang Engineering Contracting Co., Ltd. [沙兴航工程承包有限公司]⁵⁹⁵
- AVIC Changsha Design and Research Institute Co., Ltd. Xi'an Branch [中航长沙设计研究院有限公司西安分公司]
- AVIC Changsha Design and Research Institute Co., Ltd. Xiamen Branch [中航长沙设计研究院有限公司厦门分公司]
- AVIC Changsha Design and Research Institute Co., Ltd. Chengdu Branch [中航长沙设计研究院有限公司成都分公司]
- AVIC Changsha Design and Research Institute Co., Ltd. Zhuzhou Branch [中航长沙设计研究院有限公司株洲分公司]
- China Aviation Industry Third Design and Research Institute Hainan Branch [中国航空工业第三设计研究院海南分部]⁵⁹⁶
- AVIC Engineering Supervision (Hunan) Co., Ltd. [中航工程监理（湖南）有限公司]⁵⁹⁷

Key Personnel:

- Peng Jianhui [彭健辉]: Chairman; Party Secretary⁵⁹⁸

9.6.2.2. Electronics Engineering Institute [电子工程设计研究院]

Aliases and Former Names:

- AVIC CAPDI Electronics Institute [中航规划电子院] (possibly former)
- Fourth Academy [四院] (possibly former)
- Aeronautical Airborne Systems Engineering Design Institute [航空机载系统工程设计研究所] (former)⁵⁹⁹

Notable Products/Services: airborne systems, precision-guided weapon systems, spacecraft, aerospace electronics, special vehicles and components, inertial devices, sensors, military barracks, data centers⁶⁰⁰

Immediate Parent Institution: AVIC CAPDI (Beijing) Technology Co., Ltd.

Address: None found, possibly Beijing [北京]

Key Data:

- Established: 1951⁶⁰¹

Overview:

The Electronics Engineering Institute focuses on aviation airborne systems engineering, spacecraft, aerospace electronics, weapons engineering, electronic engineering, military barracks construction, and large data centers. It has created precision-guided weapon systems, spacecraft, aerospace electronics, special vehicles and components, data centers, inertial devices, sensors, standard parts, EPC management, and other products. Its projects have won the National Excellent Engineering Design Award, Ministerial Excellent Engineering Design Award, and the Scientific Progress Award.⁶⁰²

Until at least late 2021, it was an AVIC CAPDI subordinate.⁶⁰³ However, there appear to be almost no mentions of it since 2019 and none since late 2021. It is no longer listed among other AVIC CAPDI subsidiaries suggesting it has changed its name, is no longer under AVIC CAPDI, no longer exists, or some combination of the above.⁶⁰⁴

9.6.2.3. AVIC Institute of Geotechnical Engineering Co., Ltd. [中航勘察设计研究院有限公司]

Aliases and Former Names:

- Aviation Industry Surveying Institute [航空工业勘察院]
- (AVIC) Survey Institute [(中航)勘察院]
- AVIC Survey and Design Institute [中航勘察设计研究院]⁶⁰⁵

Notable Products/Services: geological and hydrological surveys and assessment, surveying and mapping, engineering and architectural services⁶⁰⁶

Immediate Parent Institution: AVIC CAPDI (Beijing) Technology Co., Ltd.⁶⁰⁷

Address: No. 56, Zhichun Road, Haidian District, Beijing [北京市海淀区知春路 56 号]⁶⁰⁸

Website: <https://www.aige.com.cn/>

Archived: <https://web.archive.org/web/20220622005941/https://www.aige.com.cn/>

Key Data:

- Established: 1952⁶⁰⁹

Overview:

The Institute of Geotechnical Engineering (AIGE) specializes in geological survey and design. AIGE has completed projects related to surveying and mapping, engineering geological

surveying, hydrogeological surveying, foundation construction and treatment, deep foundation pit support, engineering supervision, architectural design, geological disaster assessment and management, and information system construction for large defense industry and aviation industry bases, factories, airports, and others.⁶¹⁰

9.6.3. AVIC CAPDI INTEGRATION EQUIPMENT CO., LTD. [中航工程集成设备有限公司]

Aliases and Former Names:

- AVIC Engineering Equipment Co., Ltd. [中航工程集成设备有限公司]
- Equipment Design Institute of the Fourth Design and Research Institute of the Third Ministry of Machinery [第三机械部第四设计研究院设备设计所] (former)
- Aviation Industry Equipment Engineering [航空工业设备工程]⁶¹¹
- China Aviation Integration Equipment Co., Ltd. [中航工程集成设备有限公司]⁶¹²
- China Aviation Industry Planning and Design Institute Equipment Institute [中国航空工业规划设计研究院设备所] (former)⁶¹³
- AVIC Equipment (Company) [中航设备(公司)]⁶¹⁴

Notable Products/Services: aviation test equipment, aero-engine test benches, wind tunnels, life-saving equipment, furnaces, autoclaves, hydraulic kettles, composite production lines, coating, precision casting, and other non-standard equipment

Immediate Parent Institution: China Aviation Planning and Design Institute Co., Ltd.

Corporate Ownership: China Aviation Planning and Design Institute Co., Ltd. [中国航空规划设计研究总院有限公司] (100%)⁶¹⁵

Address: No. 2, Gaoxin 3rd Street, Beijing International Information Industry Base, Huilongguan Town, Changping District, Beijing, China [中国北京昌平区回龙观镇北京国际信息产业基地高新三街2号]⁶¹⁶

Website: <https://www.avic-aie.com>

Key Data:

- Established: 1951⁶¹⁷
- Personnel: over 530 employees⁶¹⁸

Overview:

AVIC CAPDI Integration Equipment Co. (AIE) conducts R&D and manufacturing of special equipment for aviation ground support. This includes aviation test equipment such as aero-engine test benches, wind tunnels, life-saving equipment, large-scale vacuum furnaces, heat treatment furnaces, autoclaves, hydraulic kettles, composite production lines, coating, precision

casting, and other non-standard equipment.⁶¹⁹ It works in military and civil aviation, aerospace, weaponry, high speed rail, nuclear power, automobile, wind power, and other industries.

AIE was founded in 1951 and was formerly known as the Equipment Design Institute of the Fourth Design and Research Institute of the Third Ministry of Machinery.⁶²⁰

Notable Collaborations:

International:

- Claims to have long-term friendly project cooperation and technical exchange relations with large engineering companies and professional equipment integration companies in the United States, Britain, France, Germany, Canada and other countries.⁶²¹

Known Subsidiaries:

- Power Engineering Design and Research Institute [动力工程设计研究院]
- Aviation Equipment Engineering Division [航空设备工程事业部]
- Mechanical and Electrical Equipment Engineering Division [机电设备工程事业部]
- Thermal Energy Equipment Engineering Division / Thermal Energy Equipment Engineering Institute (4th Research Institute) [热能设备工程事业部/热能设备工程研究所(四所)]
- Composite Material Equipment Engineering Research Institute (5th Research Institute) [复材设备工程研究所(五所)]
- Intelligent Manufacturing Engineering Research Institute (6th RI) [智能制造工程研究所(六所)]
- Shenzhen AVIC Architecture Design Co. [深圳市中航建筑设计有限公司]
- Shenzhen Branch of AVIC Engineering Integrated Equipment Co. [中航工程集成设备有限公司深圳分公司]
- Sichuan Branch of AVIC Engineering Integrated Equipment Co. [中航工程集成设备有限公司四川分公司]
- Aviation Equipment R&D Center of AVIC Engineering Integrated Equipment Co., Ltd. [中航工程集成设备有限公司航空装备研发中心]
- Aviation Equipment R&D Center of AVIC Engineering Integrated Equipment Co., Ltd.[中航工程集成设备有限公司西安分公司]⁶²²

Key Personnel:

- Wang Shiguang [王世光]: Chairman; Party Secretary
- Fang Jinyong [方近勇]: CEO; Deputy Party Secretary⁶²³

Equipment/Facilities:

- The company consists of seven functional departments:
 - General Management Department

- Planning and Development Department (Legal Risk Control Department)
- Human Resources Department
- Financial Management Department
- Technology Quality Safety Department (Safety Production Office)
- Party Building and Ideological and Political Work Department (Corporate Culture Department)
- Discipline Inspection, Supervision and Audit Department⁶²⁴

9.6.4. CHINA AVIATION INTERNATIONAL CONSTRUCTION AND INVESTMENT CO., LTD. [中国航空国际建设投资有限公司]

Notable Products/Services: engineering investment, supervision, and related consulting services, general contracting for aviation, civil and industrial construction⁶²⁵

Immediate Parent Institution: China Aviation Planning and Design Institute Co., Ltd.⁶²⁶

Address:

- No. 12, Dewai Street, Xicheng District, Beijing [北京市西城区德外大街 12 号] (same address as CAPDI)⁶²⁷

Website: <https://www.avic-aic.com/>

Archived: <https://web.archive.org/web/20220513130324/https://www.avic-aic.com/>

Key Data:

- Established: 1985⁶²⁸

Overview:

The China Aviation International Construction and Investment Co. (AVIC AIC) conducts a variety of aviation services, including aviation industry development planning, airside economic zone planning, general aviation development planning, general aviation layout planning, airport engineering, civil aviation maintenance, aviation food, air cargo, and terminal building.⁶²⁹

The company was founded in 1985 by the former Ministry of Aviation Industry, originally under the name China Aviation Engineering Contracting and Development Company. It later integrated the Comprehensive Planning and Research Institute, Architectural Design and Research Institute, Airport Planning and Design Institute, Civil Aviation Engineering Design and Research Institute, and International Engineering Division of CAPDI.

Known Subsidiaries:

- Planning & Consultancy Institute [综合规划研究院]
- Civil Building Institute [建筑设计研究院]
- Airport Planning and Design Institute [机场规划设计研究院]

- Civil Aviation Engineering Institute [民航工程设计研究院]
- Civil Aviation Architecture Design and Research Institute [民航建筑设计研究院]
- Shanxi General Aviation Group Co., Ltd. [山西通用航空集团有限公司]
- Guangxi General Aviation Aviation Industry Co., Ltd. [广西通航航空产业有限公司]
- Nanjing Aifei Passenger General Aviation Development Co., Ltd. [南京爱飞客通航发展有限责任公司]⁶³⁰

Key Personnel:

- Bai Haiping [白海平]: Chairman; Party Secretary
- Wang Yongning [王永宁]: CEO; Deputy Party Secretary
- Qi Huanjun [齐焕君]: Discipline Inspection Committee Secretary; Deputy Party Secretary
- Liu Ziyang [刘子彦]: Chief Engineer⁶³¹

AVIATION SYSTEMS, COMPONENTS, AND ACCESSORIES

AVIC's vast array of aviation products, including both the avionics, electronics, hydraulics, and electromechanical systems which go into its flight vehicles, as well as accessories ranging from parachutes to pilot helmets, are primarily handled by the subsidiary AVIC Aerospace System. Itself a massive conglomerate, AVIC Aerospace System was formed from the 2010 merger of China Avionics Systems and AVIC Electromechanical Systems.

10. AVIC Aerospace System Co., Ltd. [中航机载系统有限公司]

Aliases and Former Names:

- AVIC Airborne Systems [中航机载系统有限公司]
- AVIC Airborne [中航机载]
- Airborne Systems Company [机载系统公司]
- Airborne company [机载公司]
- Aviation industry airborne [航空工业机载]
- Airborne systems [机载系统]

Notable Products/Services: components and accessories for combat aircraft, military avionics, electromechanical products⁶³²

Immediate Parent Institution: AVIC⁶³³

Corporate Ownership: AVIC [中国航空工业集团公司] (100%)⁶³⁴

Address: Room 101, 1st Floor, Block A, Shuguang Building, No. 5 Jingshun Road, Chaoyang District, Beijing [北京市朝阳区京顺路5号曙光大厦A座1层101室]⁶³⁵

Key Data:

- Established: 2018⁶³⁶
- Assets: 8.7 billion RMB in total assets⁶³⁷

Overview:

AVIC Aerospace System manages R&D, production, and sales of airborne electromechanical systems and equipment for various aircraft and engines, along with mechanical and electrical products related to aerospace, ships, and electronic information. It is responsible for key systems and components such as functional, mission-critical, and life-saving protection for combat aircraft. The company is the most important supplier of domestic military avionics and electromechanical products, occupying more than 95% of the market share in China.⁶³⁸

Outside of its core mission, it also works in the development, production, sales and service of automotive components and systems, industrial automation and control equipment, intelligent

systems and equipment, and machinery manufacturing equipment. It has expanded its business scope to include production, R&D and services of software information products, software products, and security and service system products.⁶³⁹

AVIC System Co., Ltd. [中航工业系统有限责任公司] was split into China Avionics Systems Co. [中航航电系统公司] and AVIC Electromechanical Systems Co. [中航机电系统公司] in 2010.⁶⁴⁰ In 2018, the two re-merged to form AVIC Aerospace System, while apparently still existing as independent entities.⁶⁴¹ Which of the two companies' subsidiaries have officially moved over to the new merged entity is still unclear. This merger was done in part to facilitate the PRC's aviation electro-mechanical/electronic (avionics) national megaproject.⁶⁴²

Known Subsidiaries:

- Shanghai Aero Measurement Controlling Research Institute [上海航空测控技术研究所] [上海航空测控技术研究所] (633 Institute [633 所])
- Beijing Great Wall Aviation Measurement and Control Technology Research Institute [北京长城航空测控技术研究所] (634 Institute [634 所])
- AVICAS Generic Technology Co., Ltd. [航空工业机载系统共性技术有限公司] [航空工业机载系统共性技术有限公司]
- AVIC Aerospace Life-Support Industries Ltd. [中航工业航宇救生装备有限公司]
- Shaanxi Baocheng Aviation Instrument Co., Ltd. [陕西宝成航空仪表有限责任公司] (State-owned No. 212 Factory [国营第二一二厂])
- Baoding Xiangyang Aviation Precision Machinery Co., Ltd. [保定向阳航空精密机械有限公司]
- (AVIC) Guiyang Aviation Motor Co., Ltd. [(中航工业)贵阳航空电机有限公司]
- Sichuan Aviation Industry Chuanxi Machinery Co., Ltd. [四川航空工业川西机器有限责任公司]
- AVIC Leihua Electronic Technology Research Institute [航空工业雷华电子技术研究所]
- AVIC Luoyang Photoelectric Technology Co., Ltd. [中航洛阳光电技术有限公司]
- Baosheng Group Co., Ltd. [宝胜集团有限公司]
- Hefei Jianghang Aircraft Equipment Co., Ltd. [合肥江航飞机装备股份有限公司]
- Beijing Shuguang Aviation Electric Co., Ltd. [北京曙光航空电气有限责任公司]
- (AVIC) Hongguang Airborne Equipment Co., Ltd. [(中航工业)宏光空降装备有限公司]
- AVIC Huiyang Aviation Propeller Co., Ltd. [惠阳航空螺旋桨有限责任公司]
- AVIC Jonhon Optronics Technology Co., Ltd. [中航光电科技股份有限公司]
- AVIC Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司]
- AVIC Civil Aviation Electronics Co., Ltd. [中航民用航空电子有限公司]
- Shanghai Civil Aviation Power System Co., Ltd. [上海民用航空电源系统有限公司]
- Shanghai Civil Aviation Electronic System Co., Ltd. [上海民用航空电子系统有限公司]
- Shanghai Civil Aviation Control and Navigation System Co., Ltd. [上海民用航空控制与导航系统有限公司]

- Shanghai Civil Aviation Electromechanical System Co., Ltd. [上海民用航空机电系统有限公司]
- AVIC Aviation Simulation System Co., Ltd. [中航航空模拟系统有限公司]
- AVIC Airborne Technology Co., Ltd. [中航机载科技有限公司]
- Beijing Hanghua Refrigeration Equipment Co., Ltd. [北京航华制冷设备有限公司]
- AVIC Wuxi Radar Technology Co., Ltd. [中航无锡雷达技术有限公司]
- Tianjin Zhonghang Electromechanical Co., Ltd. [天津中航机电有限公司]
- AVIC (Shanghai) Aviation Radio Electronic Technology Co., Ltd. [中航(上海)航空无线电电子技术有限公司]
- AVIC Xi'an Aviation Computing Technology Co., Ltd. [中航西安航空计算技术有限公司]
- AVIC Xi'an Flight Automatic Control Technology Co., Ltd. [中航西安飞行自动控制技术有限公司]
- Sichuan Lingfeng Asset Management Co., Ltd. [四川凌峰资产经营管理有限公司]
- Shaanxi Qinling Aviation Electric Co., Ltd. [陕西秦岭航空电气有限责任公司]
- Zhengzhou Zhengfei Investment Holding Co., Ltd. [郑州郑飞投资控股有限公司]
- Hefei Jianghang Investment Development Co., Ltd. [合肥江航投资发展有限公司]
- Chengdu Kaihang Property Management Co., Ltd. [成都凯航物业管理有限责任公司]
- Guizhou Huafeng Electric Co., Ltd. [贵州华烽电器有限公司]
- Guiyang Aviation Electric Co., Ltd. [贵州天义电器有限责任公司]
- Henan Xinfei Electric Group Co., Ltd. [河南新飞电器集团有限公司]
- Jincheng Group Co., Ltd. [金城集团有限公司]
- Nanjing Hongguangyuan Electromechanical Manufacturing Co., Ltd. [南京宏光苑机电制造有限公司]
- Xi'an Qing'an Industrial Development Co., Ltd. [西安庆安产业发展有限公司]
- Wuhan Aviation Instrument Co., Ltd. [武汉航空仪表有限责任公司]
- Beijing Qingyun Aviation Equipment Co., Ltd. [北京青云航空设备有限公司]⁶⁴³
- Qingdao Qianshao Precision Machinery Co., Ltd. [青岛前哨精密机械公司] (Aerospace System 32.3% plurality share)⁶⁴⁴
 - Qingdao Qianshao Precision Instruments Co., Ltd. [青岛前哨精密仪器有限公司]⁶⁴⁵

Key Personnel:

- Zhang Jichao [张继超]: Chairman
- Wang Jiangang [王建刚]: Manager [经理]⁶⁴⁶

10.1. AVIC Aerospace Life-Support Industries Co., Ltd. [中航工业航宇救生装备有限公司]

Aliases and Former Names:

- AVIC Aerospace Lifesaving Equipment Company
- China Aviation Life Safety Center [中国航空生命安全中心]⁶⁴⁷

Notable Products/Services: aerospace safety and lifesaving equipment, parachutes and accessories

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁶⁴⁸

Address: No. 29, Xinhua Rd., Fancheng District, Xiangyang, Hubei Province [湖北省襄阳市樊城区新华路 29 号]⁶⁴⁹

Website: <http://www.avicxy.com/> or <https://www.ali.avic.com/>

Archived: <https://web.archive.org/web/20221122233910/http://www.avicxy.com/>
<https://web.archive.org/web/20221122234118/https://www.ali.avic.com/>

Key Data:

- Personnel: over 4,000 employees; approximately 1,700 specialist technical personnel⁶⁵⁰

Overview:

AVIC Aerospace Life-Support Industries (ALI) produces a wide range of military and civilian products, mainly related to parachutes and safety equipment. Military products include parachutes, heavy airdrop equipment, aircraft ejection seats, aircraft crew personal protection equipment such as helmets and oxygen masks, and G-suits, water and biochemical protective clothing, helicopter anti-crash seats, and micro-environmental thermal protection systems for armor, ships, and aircraft. It has also developed equipment for the PRC's space program, including astronaut protection and life-saving equipment and space exercise equipment.⁶⁵¹ It is also involved in military aerostat development.⁶⁵²

Civilian products include commercial aircraft cabin seats, interiors, life jackets, auto parts, aviation sports and leisure, petrochemical and environmental protection, mineral resources, hot air balloons and blimps, powered wing parachutes, firefighting helmets, petrochemical protection equipment, and water treatment equipment.⁶⁵³

AVIC Aerospace Life-Support Industries Ltd. was established in 2003 through the combination of the former 510 Factory, 520 Factory, and 610 Institute.⁶⁵⁴ Its products have been exported to more than 10 countries.⁶⁵⁵

Notable Collaborations:

Domestic:

- 2020 agreement to assist Huagao International Graphene Research Institute [华高国际石墨烯研究院] upgrade its graphene-magnesium batteries to national military standards⁶⁵⁶
- May manage or have a relationship with a China Aviation Lifesaving Test Base [中国航空救生试验基地].⁶⁵⁷

International:

- 2016 agreement to supply seats to Boeing for the 737 and 737-Max, via its subsidiary Hubei Hangyu Jiatai Aircraft Equipment Co., Ltd [北航宇嘉泰飞机设备有限公司]⁶⁵⁸

Known Subsidiaries:

- AVIC Life-Support Research Institute [中国航空救生研究所]
- Hubei Hangyu Jiatai Aircraft Equipment Co., Ltd. [湖北航宇嘉泰飞机设备有限公司]⁶⁵⁹
 - Present on U.S. Department of Commerce Entity List ⁶⁶⁰
- Hubei AVIC Precision Machinery Technology Co., Ltd. (Jingji Technology) [湖北中航精机科技股份有限公司 (精机科技)]⁶⁶¹
- Technology Innovation Center [技术创新中心] in Wuhan⁶⁶²

Key Personnel:

- Ma Yongsheng [马永胜]: Chairman; Party Secretary⁶⁶³

Equipment/Facilities:

- Key Laboratory of Aviation Protection and Lifesaving Technology [航空防护救生科技重点实验室]⁶⁶⁴
- National/Defense Accredited Calibration Laboratory [国家/国防认可校准实验室]⁶⁶⁵
- The highest precision rocket sled test slide in Asia
- The only high-speed airflow blowing platform in Asia
- Adverse attitude life-saving performance test system
- The only comprehensive water life-saving pool in China
- Other important large-scale basic research test facilities
- More than 120 sets of advanced CNC processing equipment such as:
 - CNC turning and milling centers
 - Vertical automatic boring and milling machines
 - CNC large-ton precision punching machines
 - CNC wire cutting and slow-walking wire cutting processing centers
 - Welding manipulators⁶⁶⁶

10.1.1. AVIC LIFE-SUPPORT RESEARCH INSTITUTE [中国航空救生研究所]

Aliases or Former Names:

- 610 Institute [610 所]

Notable Products/Services: aerospace life-saving equipment⁶⁶⁷

Immediate Parent Institution: AVIC Aerospace Life-Support Industries Co. Ltd.⁶⁶⁸

Address: No. 2, Xinyuan Road, High-tech Zone, Xiangyang, Hubei [湖北省襄阳市高新区新园路 2 号]⁶⁶⁹

Key Data:

- Personnel: over 1,800 employees, including 46 researchers, 170 senior engineers, 618 engineers⁶⁷⁰

Overview:

The AVIC Life-Support Research Institute is responsible for R&D, manufacture, and testing of aerospace lifesaving equipment,⁶⁷¹ with a particular focus on aircraft ejection seats and associated equipment such as parachutes and inflatable lifeboats.⁶⁷² It conducts research on mechanical environments, energy transmission, new materials, high-altitude human medicine, and human restricted parameters in order to develop better lifesaving equipment.

In December 2003, this Institute was combined with the 510 Factory [510 厂] and 520 Factory [520 厂], (aka the Hanjiang Machinery Factory [汉江机械厂] and the Hongwei Machinery Factory [宏伟机械厂]) to form AVIC Aerospace Life-Support Industries Ltd. [中航工业航宇救生装备有限公司]. However, the Institute still appears to exist as an independent entity under Life-Support Industries, as it is still named in various news and business directory sources as of 2021.⁶⁷³

Notable Collaborations:

- The Institute possesses a multi-target unit test chamber and a full-size environmental simulation test chamber imported from Italy.⁶⁷⁴

Equipment/Facilities:

- The first rocket sled test base (with a top speed of at least 1100 km/h)⁶⁷⁵ and high-speed airflow blowing test bed in Asia, which can undertake various high-speed ground dynamic simulation tests, aviation physiological tests, and high-altitude high-speed protection life-saving tests.⁶⁷⁶
- A multi-target unit and a full-size environmental simulation test chamber imported from Italy, which can carry out experimental research on mechanical environments, energy transmission, new materials, high-altitude human medicine, and human restricted parameters tests⁶⁷⁷

10.2. AVIC Aviation Simulation System Co., Ltd. [中航航空模拟系统有限公司]

Aliases and Former Names:

- AVIC Simulator [航空工业模拟器]

Notable Products/Services: flight simulation equipment

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Address: 5F, Building C, No.1588 Zixing Road, Minhang District, Shanghai [上海市闵行区紫星路 1588 号 C 幢 5 楼]⁶⁷⁸

Key Data:

- Established: 2020
- Employees: 150-500 personnel⁶⁷⁹

Overview:

AVIC Aviation Simulation System Co., Ltd. (AVIC Simulator), recently established in December 2020, develops flight simulation equipment for operations and training.⁶⁸⁰ It is a military-civil fusion company.⁶⁸¹

10.3. AVICAS Generic Technology Co., Ltd. [航空工业机载系统共性技术有限公司]

Aliases and Former Names:

- AVICAS GT [航空工业机载共性]

Notable Products/Services: airborne system technologies, including electronic software and hardware, operating systems, system integration and verification, electronic components, mechanical parts⁶⁸²

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁶⁸³

Address: 11th Floor, Building B, Building 28, Jiangsu Information Service Industry Base, Guangling New Town, Guangling District, Yangzhou, Jiangsu Province [江苏省扬州市广陵区广陵新城江苏信息服务产业基地内 28 号楼 B 栋 11 楼]⁶⁸⁴

Website: <http://www.avicasgt.com/>

Key Data:

- Established: 2019⁶⁸⁵
- Capital: 290 million RMB in registered capital⁶⁸⁶
- Personnel: total unknown; technical and management team of 100 people⁶⁸⁷

Overview:

AVICAS Generic Technology conducts R&D of airborne system technologies.⁶⁸⁸ This includes R&D and sales of electronic software and hardware, operating systems, system integration and verification, electronic components, and mechanical parts for airborne systems.

It also works in the fields of simulation technology, simulation test bench research and development, data processing, database and computer network services, information technology services, and technology transfer, and house leasing, among others.⁶⁸⁹

AVICAS Generic Technology was established in 2019 in Yangzhou, Jiangsu Province, described as a "strategic measure to realize the digital transformation of airborne [systems]."⁶⁹⁰

10.4. Baoding Xiangyang Aviation Precision Machinery Co., Ltd. [保定向阳航空精密机械有限公司]

Notable Products/Services: aviation components, including aviation flexible intelligent process equipment, airframe structural components, emergency hatch and upper lock products, UAV landing gear, various types of missile suspension and launch systems, as well as aviation engine production equipment remanufacturing⁶⁹¹

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁶⁹²

Corporate Ownership: AVIC Asset Management Co., Ltd. (100%)⁶⁹³

Address: No. 801, Fuxing West Road, Jingxiu District, Baoding, Hebei Province [河北省保定市竞秀区复兴西路 801 号]⁶⁹⁴

Website: <http://www.xiangyang.com.cn/>

Key Data:

- Established: 1964⁶⁹⁵
- Capital: 56 million RMB in registered capital⁶⁹⁶
- Personnel: over 500 employees⁶⁹⁷
- Floor space: factory area of 223,000 sqm

Overview:

Baoding Xiangyang Aviation Precision Machinery (AVIC Xiangyang) is focused on development of aviation airborne equipment, including aviation flexible intelligent process equipment, as well as remanufacturing of aviation engine production equipment.⁶⁹⁸ The company's main products include flexible intelligent process equipment, precision CNC machine tool remanufacturing and spare parts services, metal band sawing machines, and orthopedic medical equipment.⁶⁹⁹ It also produces orthopedic surgical instruments and provides thermal surface treatment services such as carburizing, shape correction, bluing, spraying, etc.⁷⁰⁰

The company conducts development, manufacturing, assembly, testing, and after-sales service of airframe structural components, develops emergency hatch and upper lock products for a number of aircraft models, makes landing gear for the Wing Loong, Rainbow, and other UAVs, and produces components for various types of missile suspension and launch systems.

Xiangyang assists product iterative upgrades, with new aircraft assembly tooling, flexible intelligent curved surface fixture systems, flexible vacuum adsorption platforms, and other products. It provides a large number of advanced flexible and intelligent process equipment for national advanced projects, and at the same time develops intelligent hydraulic/pneumatic process equipment, special process equipment for flexible lines, and modular precision process technology. It is located in the Xiangyang Aviation Science and Technology Equipment Industrial Park.⁷⁰¹

Notable Applications:

- Landing gear for Wing Loong, Rainbow, and other UAVs⁷⁰²

Notable Collaborations:*Domestic:*

- In 2020, AVIC Xiangyang and Shenyang University of Aeronautics and Astronautics reached a strategic cooperation agreement and jointly established the Hebei Province Aircraft Assembly Frame Engineering Research Center.⁷⁰³

International:

- Products covering aviation, aerospace, machinery, railway, shipbuilding and other industries are exported to Europe and the United States and other countries and regions.⁷⁰⁴

Known Subsidiaries:

- Baoding Xiangyang Girati Machinery Co. (a joint venture between AVIC Xiangyang and Italy's Girati Company)⁷⁰⁵
- AVIC Flexible Intelligent Process Equipment R&D Center [中航工业柔性智能工艺装备研制中心]⁷⁰⁶
- AVIC CNC Technology Remanufacturing and Spare Parts Center [中航工业数控技术再制造及备件中心]⁷⁰⁷
- Hebei Enterprise Technology Center [河北省企业技术中心]⁷⁰⁸

Key Personnel:

- Shan Yingjie [单英杰]: Chairman; CEO⁷⁰⁹

10.5. Baosheng Group Co., Ltd. [宝胜集团有限公司]

Notable Products/Services: wires and cables, electronics, intelligent technology⁷¹⁰

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership:

- AVIC Airborne System [中航机载系统有限公司] (75%)
- Yangzhou Municipal People's Government State-owned Assets Supervision and Administration Commission [扬州市人民政府国有资产监督管理委员会] (25%)⁷¹¹

Address: No. 1, North Road, Baoying, Jiangsu Province [江苏省宝应城北一路 1 号]⁷¹²

Website: <http://www.baoshenggroup.com/>

Key Data:

- Established: 1985⁷¹³
- Capital: 800 million RMB in registered capital⁷¹⁴
- Personnel: 12,000 employees⁷¹⁵

Overview:

The Baosheng Science & Technology Innovation Co. (Baosheng Cable) specializes in wires and cables, electronics, intelligent technology, systems integration, and logistics services. Its products cover power generation, aerospace, rail transit, marine engineering, communications, nuclear power, submarine cables, submarine photoelectric composite cables, and other areas.⁷¹⁶

Baosheng Cable specializes in manufacturing seven categories of cables, including industry-wide power cables, control and instrument cables, high frequency data and network cables, signal cables, magnet wires, overhead lines, building wires, precision conductors, and polymer materials. Baosheng also provides services including electrical engineering design, installation of intelligent equipment, photovoltaic power plant construction, and EPC project general contracting.⁷¹⁷

Baosheng Cable has been a contractor on many major projects, including the 2008 Olympic Stadium, Shanghai World Expo, Hangzhou G20 Summit, Beijing APEC Summit, Shanghai Tower, Beijing Capital Airport, Pudong Airport, Tiananmen Maintenance Project, Chairman Mao Memorial Hall Reconstruction Project, Three Gorges Project, Qinghai-Tibet Railway, Shanghai Maglev, Shanghai Metro, Ling'ao Nuclear Power Station, Tianwan Nuclear Power Station and the

construction of CSCEC, China Railway, and CEEC.⁷¹⁸ It has been selected as one of China's Top 500 Enterprises, Top 500 Manufacturing Companies, Top 500 Asian Brands, Top 500 Machinery Industry Companies, and Top 100 Electronic Information Companies.

Notable Applications:

- Third generation AP1000 nuclear power plant cable
- EWIS aviation cable⁷¹⁹

Notable Collaborations:

Domestic:

- CRRC
- China Shipbuilding Industry Corporation
- Zhenhua Port Machinery
- COMAC
- Shanghai Electric
- International Thermonuclear Experimental Reactor (ITER)⁷²⁰

Known Subsidiaries:

- Baosheng Technology Innovation Co., Ltd. (Baosheng Cable) [宝胜科技创新股份有限公司]
- AVIC Baosheng Electric Co., Ltd. [中航宝胜电气股份有限公司]⁷²¹

Key Personnel:

- Yang Zeyuan [杨泽元]: Chairman; CEO⁷²²

Equipment/Facilities:

- R&D and production bases located in
 - Guangdong
 - Shanghai
 - Shandong
 - Ningxia
 - Sichuan
 - Shaanxi
 - Guizhou
 - Jiangsu
 - Yangzhou
 - Changzhou
 - other regions⁷²³

10.6. Beijing Great Wall Aviation Measurement and Control Technology Research Institute [北京长城航空测控技术研究所]

Aliases and Former Names:

- 634 Institute [634 所]
- AVIC Beijing Great Wall Aviation Measurement and Control Technology Research Institute [中国航空工业集团公司北京长城航空测控技术研究所]
- Beijing Great Wall Aviation Measurement and Control Technology Research Institute Company Ltd [北京长城航空测控技术研究所有限公司]
- AVIC Beijing Control Institute [航空工业北控所]

Notable Products/Services: aviation measurement and control technology, sensor technology, comprehensive testing technology, intelligent technology⁷²⁴

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁷²⁵

Address: Building 9, Yard 29, Jinghai 2nd Road, Beijing Economic and Technological Development Zone, Beijing [北京市北京经济技术开发区经海二路 29 号院 9 号楼]⁷²⁶

Website: <http://www.avic-bmc.com/>

Key Data:

- Established: 1950⁷²⁷

Overview:

The Beijing Great Wall Aviation Measurement and Control Technology Research Institute (BMC) specializes in R&D and production of aviation measurement and control technology and test equipment. Products include airborne oil monitoring sensors, high temperature engine test sensors, structural test sensors, gas monitoring sensors, test-aided design and test verification evaluation technology, data-driven PHM technology, software and hardware for aviation equipment testing and test-aided design tools, revolving flight simulators, revolving inertial navigation testers, target tracking and stabilization platforms, and evolving antenna testers.⁷²⁸

The Institute leads the China Aviation Industry Technology and Equipment Engineering Association [中国航空工业技术装备工程协会], is a supporting unit of the National Defense Technology Industry Automation Test Technology Innovation Center [国防科技工业自动化测试技术创新中心], and is affiliated with the Chinese Aeronautical Society Test Technology Branch [中国航空学会测试技术分会] and the China Commercial Civil Aircraft Integration Test Technology Center [中国商用民用飞机集成测试技术中心]. The Institute also publishes the “Measurement and Control Technology” [测控技术] academic journal.⁷²⁹

Known Subsidiaries:

- Saiwei Avionics [赛维航电]
- Great Wall Measurement and Control Company [长城测控公司]⁷³⁰

Key Personnel:

- Mei Fangqing [梅方清]: Director; Party Committee Deputy Secretary
- Liang Daidong [梁岱东]: Deputy Director; Party Secretary
- Yang Chao [杨超]: Disciplinary Inspection Committee Secretary; Party Committee Deputy Secretary
- Wang Hong [王红]: Deputy Director; Party committee member
- Zhong Li [钟力]: Deputy Director⁷³¹

Equipment/Facilities:

- Key Laboratory of Aviation Science and Technology for Condition Monitoring Special Sensing Technology [状态监测特种传感技术航空科技重点实验室]
- Air Force Key Model Equipment Testing Laboratory [空军重点型号装备测试性实验室]⁷³²

10.7. AVIC Civil Aviation Electronics Co., Ltd. [中航民用航空电子有限公司]

Aliases and Former Names:

- 中航民用

Notable Products/Services: civil aviation avionics systems and equipment⁷³³

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁷³⁴

Corporate Ownership:⁷³⁵

- AVIC Airborne System [中航机载系统有限公司] (45%)
- Shanghai Guosheng (Group) Co., Ltd. [上海国盛(集团)有限公司] (17.3%)
- Shanghai INESA (Group) Co., Ltd. [上海仪电(集团)有限公司] (17.3%)
- Shanghai Zijiang Venture Capital Co., Ltd. [上海紫江创业投资有限公司] (15.0%)
- Shanghai Xinzhuang Industrial Zone Economic and Technological Development Co., Ltd. [上海市莘庄工业区经济技术发展有限公司] (3.0%)
- Yantai Lantian New Energy Development Co., Ltd. [烟台蓝天新能源发展有限公司] (2.4%)

Address: 9th Floor, Building 1, No. 666 Zixing Road, Minhang District, Shanghai [上海市闵行区紫星路 666 号 1 号楼 9 楼]⁷³⁶

Website: <http://aviccae.com> (apparently defunct)

Archived: <https://web.archive.org/web/20211208045055/http://aviccae.com/default.asp>

Key Data:

- Established: 2011⁷³⁷
- Capital: 4.5 billion RMB in registered capital⁷³⁸
- Personnel: 18⁷³⁹

Overview:

AVIC Civil Aviation Electronics was founded to aid in development of the C919 large passenger aircraft.⁷⁴⁰ Its business scope includes technical research, product development, manufacturing, systems integration and verification, product sales, and after-sales service for civil aircraft avionics systems and equipment, as well as services related to civil aircraft avionics.⁷⁴¹

The company was founded by AVIC and the Shanghai city government in 2011 with a registered capital of 4.5 billion RMB.⁷⁴² Shortly after its founding, it created a joint venture, Aviage Systems, with U.S. company General Electric.⁷⁴³ In addition, it appears to have a connection with AVIC's China Aeronautical Radio Electronics Research Institute (615th RI). The two (as well as Aviage and General Electric) have worked together on the COMAC C919 aircraft.⁷⁴⁴ In 2016, Wang Jiyan [王金岩] led both this company and the 615th RI,⁷⁴⁵ and the two jointly founded the AVIC Zizhu Tesichuang Joint Incubator [中航紫竹特思创联合孵化器], which gives aids defense industry research institutes [军工研究所].⁷⁴⁶ The company's industrial park appears to house both entities as well.⁷⁴⁷

Notable Applications:

- Avionics for the COMAC C919 passenger aircraft⁷⁴⁸

Notable Collaborations:

Domestic:

- AVIC China Aeronautical Radio Electronics Research Institute (615th RI)

International:

- General Electric Aviation Services (collaboration on the C919)⁷⁴⁹

Known Subsidiaries:

- Aviage Systems [昂际航电]⁷⁵⁰

Key Personnel:

- Cao Yang [曹阳]: Chairman⁷⁵¹

Equipment/Facilities:

- National-level civil aircraft avionics industry base: the AVIC Civil Avionics Industrial Park [国家级民机航电产业基地中航民用航空电子产业园], associated with Military-Civil Fusion (MCF)⁷⁵²
- COMAC aircraft customer service entity⁷⁵³

10.7.1. AVIAGE SYSTEMS [昂际航电]**Aliases and Former Names:**

- AVIC GE Civil Avionics Systems Co., Ltd. [中航通用电气民用航电系统有限责任公司/中航通用电气民用航电公司]

Notable Products/Services: civilian aircraft avionics and electronic components⁷⁵⁴

Immediate Parent Institution: AVIC Civil Aviation Electronics Co., Ltd.⁷⁵⁵

Corporate Ownership:

- AVIC [中国航空工业集团公司] (50%)
- General Electric (50%)⁷⁵⁶
 - GE Aviation Systems (Technology) LLC [通用电气航空系统技术有限公司] (34.62%)⁷⁵⁷
 - GE Aviation Systems Pacific Service Centre Pte Ltd. [通用电气航空系统太平洋服务中心有限公司] (15.38%)⁷⁵⁸

Address:

- Building 2, No. 666 Zixing Road, Minhang District, Shanghai 200241 [中国 上海 闵行区 紫星路 666 号 2 号楼, 200241]
- 9197 W Thunderbird Road, Suite 100, Peoria, Arizona, 85381, USA
- 36 Alsace Lorraine, 31000 Toulouse, France⁷⁵⁹

Website: <https://www.aviagesystems.com/>

Key Data:

- Established: 2012⁷⁶⁰
- Personnel: over 400 employees⁷⁶¹

Overview:

Aviage Systems, a 50/50 joint venture between AVIC and U.S. company General Electric, produces airborne solutions for civil aircraft, primarily COMAC's C919 airliner. Its products include in-flight connectivity solutions based on high-throughput Ku satellites, digital/big data-based solutions to increase operational efficiency, onboard maintenance systems, flight recording systems, flight management systems, computing resources, remote data concentration, aircraft data networks, integrated display system, Tier-1 system integration services, and 3rd party hosted subsystems integration.⁷⁶² Some of Aviage's products have applications in non-aviation industries, such as industrial automation and transportation.⁷⁶³

At the 2016 Zhuhai Airshow, AVIC and GE won a “China Aerospace” “cooperation award” for promoting the development of Chinese civil aviation avionics technology and industry.⁷⁶⁴ In addition, in a report on the announcement of this joint venture in 2011, the New York Times wrote that “no Western company has been more aggressive in helping China pursue that [commercial jetliner] dream than GE.”⁷⁶⁵

Notable Applications:

- Open-architecture High Integrity Computing Platform (HICP)⁷⁶⁶

Notable Collaborations:*Domestic:*

- COMAC⁷⁶⁷
- Civil Aviation Flight University of China (CAFUC)⁷⁶⁸
- China Aeronautical Radio Electronics Research Institute (615th RI) (worked on avionics for the C919 together with parent entities AVIC Civil Aviation Electronics Co., Ltd. and GE Aviation Services)⁷⁶⁹

International:

- This company is itself a joint venture with General Electric

Key Personnel:

- George Y. Chang [张元中]: CEO⁷⁷⁰

10.8. (AVIC) Hongguang Airborne Equipment Co., Ltd. [(中航工业)宏光空降装备有限公司]

Aliases and Former Names:

- AVIC 513 [中航工业 513]
- AVIC Hongguang [中航工业宏光]
- Nanjing Hongguang Airborne Equipment Factory [南京宏光空降装备厂]⁷⁷¹

Notable Products/Services: parachute and aviation life-saving equipment⁷⁷²

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership:

- AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (54.45437%)
- AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (36.549677%)
- Gongqingcheng Hongjuli Investment Partnership (Limited Partnership) [共青城宏聚力投资合伙企业（有限合伙）] (3.50686%)
- Gongqingcheng Hongqixin Investment Partnership (Limited Partnership) [共青城宏启新投资合伙企业（有限合伙）] (3.50686%)
- Gongqingcheng Hongningxin Investment Partnership (Limited Partnership) [共青城宏凝心投资合伙企业（有限合伙）] (1.98214%)⁷⁷³

Address: No. 1, Hongguang Road, South Longpan Road, Qinhuai District, Nanjing, Jiangsu Sheng [江苏省南京市秦淮区龙蟠南路宏光路 1 号]⁷⁷⁴

Website: <http://avic513.cn/>

Archived: <https://web.archive.org/web/20190522123613/http://avic513.cn/>

Key Data:

- Established: 1951⁷⁷⁵
- Personnel: over 1,200 employees
- Floor space: over 270,000 sqm⁷⁷⁶

Overview:

AVIC Hongguang Airborne Equipment Co. specializes in airdrop and aviation life-saving equipment, and has also been involved in China's early nuclear program and manned spaceflight program. Products include aircraft seat belts, hydraulic hand cranks, pumps, and other accessories which are widely used in ground, naval, and air equipment and as well as by civil aviation.⁷⁷⁷

AVIC Hongguang was officially established in April 1951 as one of the 156 key projects aided by the Soviet Union to build up China during the "First Five-Year Plan" period. It is considered the cradle and base of China's airborne airdrop and aviation lifesaving industries.

Notable Applications:

- SBS-9 paratrooper main station parachute
- SBS-10 low-altitude parachute
- SBS-11 armed parachute, an airfoil parachute used for training and combat use by airborne troops and special forces
- BFS-6A backup parachute
- BFS-7 backup parachute
 - All parachute models are usable in Y-5, Y-8(C), A-26, and Il-76 aircraft⁷⁷⁸
- Helicopter rappelling (rope drop) device⁷⁷⁹
- Airplane and helicopter seat belts⁷⁸⁰

Key Personnel:

- Tian Li [田力]: Chairman
- Zhang Li [张力]: CEO⁷⁸¹

Equipment/Facilities:

- Nanjing Hongguang Airborne Equipment Factory Civil Product Management Department [南京宏光空降装备厂民品经营部]
- Nanjing Hongguang Airborne Equipment Factory Staff Technical Service Department [南京宏光空降装备厂职工技术服务部]⁷⁸²
- 4 research institutes focusing on airdrops, aviation accessories, general aviation equipment, and process technology, and 1 civilian product research and development center.

10.9. AVIC Huiyang Aviation Propeller Co., Ltd. [惠阳航空螺旋桨有限责任公司]

Aliases and Former Names:

- Huiyang Aviation [惠阳航空]
- Baoding Huiyang Aviation Propeller Co., Ltd. [保定惠阳航空螺旋桨有限责任公司]
- Baoding Huiyang Aviation Propeller Factory [保定惠阳航空螺旋桨制造厂]
- Baoding Propeller Factory

Notable Products/Services: aviation propellers

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.⁷⁸³

Corporate Ownership: Avicopter [中航直升机有限责任公司] (100%)⁷⁸⁴

Address: No. 8, Huiyang Street, Jingxiu District, Baoding, Hebei Province [河北省保定市竞秀区惠阳街 8 号]⁷⁸⁵

Website: <http://www.bpf.avic.com> (apparently defunct)

Key Data:

- Established: 1960⁷⁸⁶

Overview:

The AVIC Huiyang Aviation Propeller Co. (BPF) was established in 1960. It is the only enterprise in China that specializes in research and manufacturing of aviation propellers. It also produces core moving parts for helicopters, as well as civilian non-aviation products such as air cooler fans, cooling tower fans, direct air-cooling fans for power plants, large wind turbine blades, and subway fans. It has become a leading enterprise for large-scale axial cooling fans in China.⁷⁸⁷ It has undertaken a number of national key projects, from the first wooden propeller to the first metal propeller to the first composite propeller.

Notable Applications:

- Z-XX helicopter tail rotor system⁷⁸⁸
- Propellers for Y-7, Y-8, Y-5B, Y-11B, N-5B and Kitty Hawk 500 aircraft⁷⁸⁹

Key Personnel:

- Liao Gaomao [廖高茂]: Party Secretary; Chairman⁷⁹⁰

Equipment/Facilities:

- A new factory located in Baoding National High-tech Development Zone opened in 2014⁷⁹¹

10.10. Beijing Shuguang Aviation Electric Co., Ltd [北京曙光航空电气有限责任公司]

Aliases and Former Names:

- Factory 125 [125 厂]
- (AVIC) State-owned Beijing Shuguang Motor Factory [(中航工业)国营北京曙光电机厂]

- Beijing Shuguang Aviation Electric Co., Ltd. [北京曙光航空电器有限责任公司]

Notable Products/Services: aviation power systems, aviation electric drive systems, micro-control motors and sensors⁷⁹²

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership: AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (100%)⁷⁹³

Address: No. 5, Jingshun Road, Chaoyang District, Beijing [北京朝阳京顺路 5 号]⁷⁹⁴

Website: <http://www.bjshuguang.com/>

Key Data:

- Established: 1958⁷⁹⁵
- Capital: 80 million RMB in registered capital⁷⁹⁶
- Floor space: total area of 72,000 sqm⁷⁹⁷

Overview:

Beijing Shuguang Aviation Industry Co. specializes in three categories of products: aviation power systems, aviation electric drive systems, and micro-control motors and sensors. It has produced a total of more than 30 series and more than 400 models, mainly used in the aviation field, including for aircraft, engines, radar, fuel, environmental control, and other systems. Its products support almost all of AVIC's military aircraft. The products include aviation power systems, DC starter generators, various AC and DC pump motors, drive and AC servo motors, AC and DC tachogenerators, AC servo tachometer units, and line/angular displacement sensors.⁷⁹⁸ The company was the first to develop a double-convex structure and a hybrid excitation structure power generation system.⁷⁹⁹

The company's headquarters and R&D center are located in Chaoyang District, Beijing, and the production base is located in Airport Industrial Zone, Shunyi District, Beijing.

Key Personnel:

- Hu Donglin [胡冬林]: Executive Director⁸⁰⁰

10.11. AVIC Airborne Systems Co Ltd. [中航机载系统股份有限公司]801

Aliases and Former Names:

- AVIC Avionics [中航电子]
- China Avionics Systems Co., Ltd. [中航航空电子系统股份有限公司] (former)
- China AVIC Avionics Equipment Co. Ltd. [中航航空电子设备股份有限公司] (former)

- China AVIC Electronics Co. Ltd. [中航机载电子股份有限公司] (former)
- Jiangxi Changhe Automobile Co., Ltd. [江西昌河汽车股份有限公司] (former)

Notable Products/Services: avionics, aviation lighting⁸⁰²

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership:

- AviChina [中国航空科技工业股份有限公司] (39.43%)⁸⁰³
- AVIC Airborne System [中航机载系统有限公司] (percentage unknown)
- AVIC [中国航空工业集团公司] (percentage unknown)
- Hanzhong Aviation Industry (Group) Co., Ltd. [汉中航空工业（集团）有限责任公司] (percentage unknown)
- China Securities Finance Corporation Limited [中国证券金融股份有限公司] (percentage unknown)
- various others (percentage unknown)⁸⁰⁴

Address:

- Building 8, No. 29, Jinghai 2nd Road, Beijing Economic and Technological Development Zone, Beijing [北京市北京经济技术开发区经海二路29号院8号楼] (registered address)
- Area A, Floor 25, Building 16, No. 5, Shuguang Xili, Chaoyang District, Beijing [北京市朝阳区曙光西里甲5号院16号楼25层A区] (office address)⁸⁰⁵

Website: <http://www.aviconics.com.cn/>

Archived: <https://web.archive.org/web/20220501180554/http://www.aviconics.com.cn/>

Key Data:

- Established: 1999⁸⁰⁶
- Capital: 1.759 billion RMB in registered capital⁸⁰⁷
- Personnel: 14,144 employees⁸⁰⁸

Overview:

China Avionics Systems' product line covers aircraft flight control systems, inertial navigation systems, flight attitude systems, aircraft parameter acquisition systems, atmospheric data systems, and aviation lighting. This includes control panel components, flight warning systems, electric drive and control systems, flight indicating instruments, electrical controls, sensors, and sensitive components. The company is expanding into the non-aeronautical defense and civilian markets, and provides related supporting system solutions, products, and services for aerospace, weaponry, ships, electronic information, intelligent systems, electromechanical automation, basic devices, and other fields.⁸⁰⁹

Originally, it was a part of AVIC Systems Co. [中航工业系统有限责任公司/中航系统有限责任公司/中航系统公司], which in 2010 split into China Avionics Systems Co. [中航航电系统公司] and AVIC Electromechanical Systems Co. [中航机电系统公司].⁸¹⁰ In 2018, the two re-merged to form AVIC Aerospace System Co. [中航机载系统有限公司], while apparently still existing as independent entities.⁸¹¹

Known Subsidiaries:⁸¹²

- Currently has 10 holding companies and 12 trustees⁸¹³
- AVIC Optronics [洛阳电光设备研究所]
- China Aeronautical Radio Electronics Research Institute [中国航空无线电电子研究所]
- AVIC ATM System & Equipment Corporation Limited [中航空管系统装备有限公司]
- AVIC Xi'an Flight Automatic Control Research Institute [西安飞行自动控制研究所]
- AVIC (Xi'an) Aeronautics Computing Technique Research Institute [航空工业西安航空计算技术研究所]
- Taiyuan Aero-instruments Co., Ltd. [太原航空仪表有限公司]
- Shaanxi Huayan Aero-Instrument Co., Ltd. [陕西华燕航空仪表有限公司]
- Shaanxi Qianshan Avionics Co., Ltd [陕西千山航空电子有限责任公司]
- Shaanxi Dongfang Aviation Instrument Co., Ltd. [陕西东方航空仪表有限责任公司]
- Lanzhou Wanli Aviation Electromechanical Co., Ltd. [兰州万里航空机电有限责任公司]
- Lanzhou Flight Control Co., Ltd. [兰州飞行控制有限责任公司]
- Chengdu CAIC Electronics Co., Ltd. [成都凯天电子股份有限公司]
- AVIC Beijing Keeven Aviation Instrument Company Ltd [北京青云航空仪表有限公司]
- Suzhou Changfeng Instruments Company Ltd [苏州长风航空电子有限公司]
- AVIC Shanghai Electric Company Ltd [上海航空电器有限公司]
- AVIC System Co., Ltd [中航系统有限责任公司]
- AVIC Shenzhen Nanhang Industry Group [(中航工业)深圳市南航工业集团]
- Shenzhen Baocheng Technology Co., Ltd. [深圳宝成科技有限公司]

Key Personnel:

- Zhang Kunhui [张昆辉]: Chairman; Legal Representative
 - At one point Zhang was the chairman of AVIC Aerospace System, AVIC Avionics, and AVIC EM⁸¹⁴
- Yu Zhuo [于卓]: CEO⁸¹⁵
- Zhang Hong [张红]: Deputy CEO (Director)⁸¹⁶
- Zhang Lingbin [张灵斌]: Deputy CEO (Deputy Director)⁸¹⁷

Inclusion on U.S. Entity Lists:

- Present on U.S. Office of Foreign Asset Control Sanctions List⁸¹⁸
- Present on U.S. Department of Defense Communist Chinese Military Companies List⁸¹⁹

10.11.1. AVIC ATM SYSTEM & EQUIPMENT Co., LTD. [中航空管系统装备有限公司]

Aliases and Former Names:

- 中航空管

Notable Products/Services: air traffic control equipment, products and services for airspace integrated management, aviation operations, and information security

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Address: 3F, Building 2, No. 666 Zixing Road, Minhang District, Shanghai [上海市闵行区紫星路 666 号第二幢 3 楼]⁸²⁰

Website: <http://www.avicatm.cn/>

Overview:

AVIC ATM System & Equipment Co. provides products and services for industry customers in three major business areas: airspace integrated management, aviation operations, and information security, as well as air traffic control equipment development. Its main areas of concern are aviation flight safety and efficient airspace operations. It is located in Shanghai Zizhu National High-tech Industrial Development Zone.

10.11.2. AVIC BEIJING KEEVEN AVIATION INSTRUMENT COMPANY LTD [北京青云航空仪表有限公司]

Aliases and Former Names:

- Aviation Industry Qingyun [航空工业青云]

Notable Products/Services: airborne avionic and flight control systems⁸²¹

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁸²²

Address: No. 5, Shijun Street, Renhe Town, Shunyi District (Science and Technology Innovation Functional Zone), Beijing [顺义区仁和镇石俊街 5 号院 (科技创新功能区)]⁸²³

Website: <http://www.keeven.com/>

Archived: <https://web.archive.org/web/20170627001108/http://www.keeven.com/>

Key Data:

- Established: 1958⁸²⁴
- Capital: 63.44 million RMB in registered capital⁸²⁵
- Personnel: 1,400 employees⁸²⁶

Overview:

The AVIC Beijing Keeven Aviation Instrument Co. is mainly engaged in the research, development, and production of aviation products related to avionics and control systems. Products include automatic flight control systems (including automatic throttle control systems), aviation gyroscopes, rate gyroscopes, accelerometers, radio altimeters, integrated display equipment, and aviation electricity meters.⁸²⁷ Civilian products include central air conditioners and supporting products, liquid crystal display modules, reflow soldering machines, plastic products, precision dynamic balancing machines, pharmaceutical machinery, and liquid dispensers.⁸²⁸ The company also provides professional services such as aviation airborne equipment maintenance, product environmental testing, physical and chemical measurement testing, personnel training, system development, and property management.⁸²⁹

It is considered a backbone enterprise in the field of military aviation airborne equipment in China and has been awarded the title of "Major Contributor in China's Aviation Industry Construction."⁸³⁰

Known Subsidiaries:

- Beijing Qingyun Aviation Equipment Co., Ltd. [北京青云航空设备有限公司]
- Beijing Qingyun Lean Testing Equipment Co., Ltd. [北京青云精益检测设备有限公司]⁸³¹

Key Personnel:

- Yu Zhuo [于卓]: Chairman
- Zhang Lili [张力立]: Board Member; Manager [经理]
- Zhang Pengbin [张彭斌]: Board Member
- Li Yaoguo [李耀国]: Board Member
- Zang Hongwei [臧红伟]: Board Member
- Liu Jun [刘军]: Supervisor [监事]
- Han Yelin [韩业林]: Supervisor
- Yuan Huo [袁豁]: Chairman of the Supervisory Board [监事会主席]⁸³²

Equipment/Facilities:

- Flight control simulation test center
- Physical and chemical measurement and testing center
- Product environmental test center
- CNC machining center⁸³³

10.11.3. CHENGDU CAIC ELECTRONICS CO., LTD. [成都凯天电子股份有限公司]

Aliases and Former Names

- State-owned 161st Factory [国营第一六一厂]

Notable Products/Services: systems for data testing, management, and transmission, fuel booster pumps, aircraft maintenance platforms, elastomeric sealing and connection^{834 835}

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership:

- China Avionics Systems Co., Ltd. [中航航电系统公司] (main - 88.3%)
- Chengdu Aircraft Design Institute [成都飞机设计研究所] (5.07%)
- AVIC Capital Co., Ltd. [中航资本控股股份有限公司] (5.07%)
- Chengdu Aircraft Industry Group Co., Ltd. [中国航空工业成都飞机工业集团有限公司] (1.56%)⁸³⁶

Address: No. 515, Xihuo Station Road, Qingyang District, Chengdu, Sichuan Province [四川省成都市青羊区西货站路 515 号]⁸³⁷

Website: <http://www.caic-china.com>

Key Data:

- Established: 1962
- Personnel: over 1,800 employees⁸³⁸

Overview:

Chengdu CAIC Electronics primarily develops and produces data testing systems and high-precision atmospheric data pressure standards. Its five main product categories include flight data management, wireless data transmission, fuel booster pumps, aircraft maintenance platforms, and elastomeric sealing and connection.⁸³⁹ It also produces atmospheric data systems, door signal systems, aircraft engine sensors, and cargo systems.

CAIC Electronics developed the first digital air data computer in China. It is also the first company in China to successfully develop a high-pressure, high-precision miniaturized vibrating cylinder pressure sensor. It develops three-axis air data system technology for helicopters. The company has been rated as a national enterprise technology center and a high-tech enterprise, and has been listed as a designated unit for national security.⁸⁴⁰

Notable Applications:

- Products for the C919 large passenger aircraft and MA600 regional aircraft⁸⁴¹

Notable Collaborations:

International:

- Claims to maintain extensive economic and technological cooperation with well-known companies in the United Kingdom, the United States, France, Germany and other countries, and its products are used in Boeing and Airbus aircraft, aerospace and oil exploration and production equipment⁸⁴²

Known Subsidiaries:

- Chengdu Kaitian Electronics Co., Ltd. Pidu Chenghang Branch [成都凯天电子股份有限公司郫都成航分公司]⁸⁴³
- Kaitian Quality Inspection [凯天质检]
- Chengdu Kaitian Feihao Data Communication Technology Co., Ltd. / Kaitian Feihao [成都凯天飞昊数据通信技术有限公司/凯天飞昊]
 - Holding subsidiary of Kaitian Electronics Co., Ltd., specializing in R&D, production and sales of military and civilian electronics, communications, and computer equipment and systems.⁸⁴⁴
- Kaitian Electronics Co., Ltd. [凯天电子股份有限公司]⁸⁴⁵

Key Personnel:

- Chen Tieyan [陈铁燕]: Chairman
- Wang Bo [王波]: CEO⁸⁴⁶

10.11.4. CHINA AERONAUTICAL RADIO ELECTRONICS RESEARCH INSTITUTE [中国航空无线电电子研究所]

Aliases and Former Names:

- 615 Institute [615 所]
- AVIC (Shanghai) Aviation Radio Electronic Technology Co., Ltd. [中航（上海）航空无线电电子技术有限公司] (possible new name)⁸⁴⁷
- AVIC Shanghai Electrical Institute [航空工业上电所]
- Shanghai Electrical Institute [上电所]

Notable Products/Services: military and civil avionics, airborne communications equipment, navigation systems, cockpit display controls, computer processing and data management, drone controls, target acquisition systems, flight management systems^{848 849}

Immediate Parent Institution: China Avionics Systems Co., Ltd.⁸⁵⁰ (may have transferred to AVIC Aerospace System)

Address: No. 432, Ziyue Road, Minhang District, Shanghai [上海市闵行区紫月路 432 号]⁸⁵¹

Website: <http://www.careri.avic.com/>

Key Data:

- Established: 1957
- Personnel: over 2,600 employees⁸⁵²

Overview:

The China Aeronautical Radio Electronics Research Institute is primarily engaged in research related to military and civil avionics technology, aeronautical radio communication, and navigation system.⁸⁵³ It also develops and produces products related to integrated data management, close-range target acquisition, computer image processing, distributed networked decision-making, flight management systems, Distributed Integrated Modular Avionics (DIMA), and Integrated Display Control Systems (IDCS).⁸⁵⁴

The Institute may have recently received a new name - AVIC (Shanghai) Aviation Radio Electronic Technology Co., Ltd. [中航（上海）航空无线电电子技术有限公司].⁸⁵⁵

Notable Collaborations:

International:

- Listed partners include: Rockwell Collins, L3 Communications, TT Electronics, Esterline, Thales Avonics, FTG, Honeywell, Tech SAT, COMAC, Elbit Systems of America, Jabil, Great River Technology, CoreAVI, General Electric.⁸⁵⁶

Key Personnel:

- Wu Jie [吴捷]: Deputy Director
- Liu Zhongwei [刘忠伟]: Deputy Chief Engineer
- Wan Peng [万鹏]: Project Leader [项目负责人]
- Wang Jingjing [王经典]: Testing Department Director [测试部部长]⁸⁵⁷

Equipment/Facilities:

- 20 laboratories built to international standards for professional technology research, product life cycle development, and product testing and verification⁸⁵⁸

- Key Laboratory of Avionics Integrated Technology [航电综合技术重点实验室] (which may also be known as 航空电子综合技术系统国家级重点实验室/航空电子系统综合技术国防科技重点实验室)
 - Works on aerospace weapons and equipment development and applications and has done work for the Comac C919 and CRAIC C929 civilian airliners⁸⁵⁹
- Software Evaluation Center [软件测评中心]
- Electromagnetic Compatibility Supervision and Testing Center [电磁兼容监督检测中心]
- Component Testing Center [元器件检测中心]
- Reliability and Environmental Testing Center [可靠性与环境试验中心]⁸⁶⁰

10.11.5. LANZHOU FLIGHT CONTROL Co., LTD. [兰州飞行控制有限责任公司]

Aliases and Former Names:

- State-Owned 242nd Factory [国营第 242 厂]
- Lanfei [兰飞]⁸⁶¹

Notable Products/Services: military and civil automatic flight control systems, aviation instruments⁸⁶²

Immediate Parent Institution: China Avionics Systems Co., Ltd. [中航航电系统公司]

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁸⁶³

Address: No. 668, West Road, Anning District, Lanzhou, Gansu Province [甘肃省兰州市安宁区西路 668 号]⁸⁶⁴

Website: <http://www.lanfei.com.cn/>

Key Data:

- Established: 1956⁸⁶⁵
- Capital: 460 million RMB in registered capital⁸⁶⁶
- Personnel: 1,170 employees
- Floor space: 430,000 sqm⁸⁶⁷

Overview:

AVIC Lanzhou Flight Control specializes in research and production of automatic flight control systems and other aviation instruments. It developed and produced China's first autopilot systems, and has conducted R&D on airborne equipment for helicopters, bombers, transport aircraft, general-purpose aircraft, UAVs, special aircraft, and dozens of other key projects.

The company was founded in 1956 as the State-owned 242nd Factory, one of China's 156 key national projects constructed under the First Five-Year Plan. Though primarily located in Lanzhou, the company has established a research and development center in Xi'an, mainly engaged in the research and development of new products and new technologies.⁸⁶⁸

Notable Collaborations:

- Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences⁸⁶⁹

Key Personnel:

- Zhang Fujing [张复京]: Chairman
- Xu Chang [徐昌]: CEO⁸⁷⁰

10.11.6. LANZHOU WANLI AVIATION ELECTROMECHANICAL CO., LTD. [兰州万里航空机电有限责任公司]

Aliases and Former Names:

- State-Owned 135th Factory [国营第一三五厂]
- Lanzhou Wanli Aero Electro-mechanism Co., Ltd.⁸⁷¹
- AVIC Wanli [航空工业万里]⁸⁷²

Notable Products/Services: aviation motors, aircraft lighting, airborne computers, generators, emergency rescue equipment, landing gear, UAV systems⁸⁷³

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁸⁷⁴

Address:

- No. 71, Wanxin Road, Anning District, Lanzhou, Gansu Province [甘肃省兰州市安宁区万新路 71 号]⁸⁷⁵
- No. 30, Wanli West Village, Anning West Road, Anning District, Lanzhou, Gansu Province [甘肃省兰州市安宁区安宁西路万里西村 30 号]⁸⁷⁶

Website: www.lzwanli.com.cn

Key Data:

- Established: 1956⁸⁷⁷
- Assets: 2.2 billion RMB in total assets

- Personnel: over 1,500 employees
- Floor space: over 200,000 sqm, with a constructed area of 75,000 sqm⁸⁷⁸

Overview:

Lanzhou Wanli Aviation Electromechanical is mainly engaged in producing aviation motors, electric mechanisms, aircraft lighting, airborne computers, generators, airborne systems, emergency rescue equipment, electric landing gear, and UAV systems. It has been awarded the "Outstanding Contribution Award for High-Tech Defense Equipment Development and Construction Project" by six national ministries and commissions.⁸⁷⁹ Electric actuation and drive system accounts for more than 60% of the company's operating income, and Wanli has a domestic market share of more than 75% in this field.⁸⁸⁰ The company was founded in 1956 and officially began production in 1958.

Notable Collaborations:

- Jiangsu Tengxuan Science and Technology [江苏腾旋科技]⁸⁸¹

Known Subsidiaries:

- Aviation Electromechanical Research Institute [航空机电研究院]
- Wanli Modern Manufacturing Technology Center [万里现代制造技术中心]⁸⁸²

Key Personnel:

- Chao Shiyuan [晁世元]: Chairman; Party Secretary
- Sheng Guocang [盛国苍]: CEO; Deputy Party Secretary
- Li Yong [李勇]: Chief Engineer; Deputy CEO; Director of Science and Technology Committee
- Tian Pei [田沛]: Deputy Party Secretary; Secretary of Discipline Inspection Commission
- Dan Saijun [但赛君]: Chief Accountant⁸⁸³

10.11.7. AVIC OPTRONICS [洛阳电光设备研究所]

Aliases and Former Names:

- 613 Institute [613 所]
- AVIC Opto-electrical Institute [航空工业光电所]
- AVIC Luoyang Opto-electrical Technology Development Center [中国航空工业总公司洛阳光电技术发展中心]
- AVIC Luoyang Optronics Equipment Development Institute [中国航空工业集团公司洛阳光电设备研究所]⁸⁸⁴

Notable Products/Services: optical and IR sensors, electronic displays, photoelectric detection and countermeasures, task processing technology, sonar buoys and submarine technology⁸⁸⁵

Immediate Parent Institution: China Avionics Systems Co., Ltd.⁸⁸⁶

Address: No. 25, Kaixuan West Road, Xigong District, Luoyang, Henan Province [河南省洛阳市西工区凯旋西路 25 号]⁸⁸⁷

Website: <https://www.avicoptronics.com/>

Key Data:

- Established: 10 May 1970⁸⁸⁸
- Items produced: has delivered over 15,000 sets of advanced aviation equipment for domestic and foreign military users since inception⁸⁸⁹
- Personnel: 2,825 employees⁸⁹⁰

Overview:

AVIC Optronics conducts R&D, production, and testing for photoelectric detection and countermeasures, aiming displays, and task processing, as well as technology and products related to sonar buoys and submarines. It produces a wide range of sensors, IR, and visual spectrum camera and night vision goggles. Its capabilities extend to precision machining, optical processing, electronics production, and complex opto-mechanical systems testing capabilities.

In order to diversify their scope, the Institute has focused on providing technologies and products from the military aviation field to non-aeronautical defense and non-aerospace defense clients. The Institute's civilian products focus on intelligent robots, civilian optoelectronics, virtual reality, and electronic power supplies. More than 40 of the Institute's products have entered the civilian market.

Notable Applications:

- “Dragoneye” [“龙之眼”] optical pods for attack helicopters and UAVs
- “Sharp Sight” series of HMDs
- Displays for the C919 passenger jet⁸⁹¹

Notable Collaborations:

International:

- Claims to have developed military trade cooperation with Pakistan and other air forces, military industry groups in South Africa, Algeria and other countries, and other international companies⁸⁹²

Key Personnel:

- Li Mingsuo [李明锁]: Director

- Tan Ruisong [谭瑞松]: CEO⁸⁹³
- Ding Quanxin [丁全心]: Deputy Director; Chief Engineer
- Zhang Jianzhong [张建中]: Chief Accountant⁸⁹⁴

Equipment/Facilities:

- Defense S&T Key Laboratory of Fire Control Technology [火力控制技术国防科技重点实验室]
 - Conducts research on command & control, photoelectric detection and countermeasures, and targeting displays for airborne, ground vehicle, and ship-based platforms⁸⁹⁵
- Key Laboratory of Optoelectronic Control Technology⁸⁹⁶
- Optoelectronics R&D Center (Luolong)
- Optoelectronic industrial (Yibin, Sichuan Province)
- An innovation center was recently established in Beijing⁸⁹⁷

10.11.8. SHAANXI DONGFANG AVIATION INSTRUMENT CO., LTD. [陕西东方航空仪表有限责任公司]

Aliases and Former Names:

- State-owned Dongfang Instrument Factory [国营东方仪器厂] (former)⁸⁹⁸

Notable Products/Services: aviation instruments, flight control systems, torque tools, testing instruments, and other products⁸⁹⁹

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁹⁰⁰

Address:

- Xi'an Construction Engineering Technology Entrepreneurship Base, Intersection of Shenzhou 4th Road and Gongye 2nd Road, Chang'an District, Xi'an, Shaanxi Province, [陕西省西安市长安区神州四路与工业二路交汇处，西安建工科技创业基地] (Xi'an address)⁹⁰¹

Website: <http://www.dfzhunda.com/>

Key Data:

- Established: 1970⁹⁰²

- Assets: 840 million RMB in total assets
- Personnel: approximately 700 employees
- Floor space: 74,000 sqm⁹⁰³

Overview:

The Shaanxi Dongfang Aviation Instrument Co. develops and produces aviation instruments, flight control systems, torque tools, testing instruments, and other products. Products include helicopter flight control systems, UAV navigation/flight control systems, Beidou satellite communication/navigation systems, fiber optic strapdown inertial navigation/navigation attitude systems, MEMS strapdown attitude systems, gyro instruments, and micro motors and sensors.⁹⁰⁴

Established in 1970, the company is headquartered in Hanzhong, Shaanxi Province. The original factory was called the State-owned Dongfang Instrument Factory. In 2013, it was incorporated and changed its name to Shaanxi Dongfang Aviation Instrument Co., Ltd. and integrated into the overall listing of AVIC Avionics. In September 2015, a branch was established in Xi'an, responsible for product development and project cooperation.⁹⁰⁵

Notable Applications:

- Components for Beidou satellite system
- “Zhunda” [准达] brand of torque wrenches and other tools⁹⁰⁶

Known Subsidiaries:

- Shaanxi Dongfang Aviation Instrument Co., Ltd. Xi'an Branch
- State-owned Dongfang Instrument Factory Staff Technical Association Technical Service Department
- State-owned Dongfang Instrument Factory Labor Service Company
- State-owned Dongfang Instrument Factory Hotel
- State-owned Dongfang Instrument Factory Ankang Hanbin Branch
- State-owned Oriental Instrument Factory Bafang Company⁹⁰⁷

Key Personnel:

- Jiang Xuanwen [姜选文]: Chairman⁹⁰⁸

10.11.9. SHAANXI HUAYAN AERO-INSTRUMENT CO., LTD. [陕西华燕航空仪表有限公司]

Aliases and Former Names:

- State-owned 141st Factory [国营第一四一厂]

Notable Products/Services: positioning and navigation systems for military and civil aviation, aerospace, weaponry, ships, communications⁹⁰⁹

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership:

- China Avionics Systems [中航航电系统公司] (80%)
- ZEMIC [中航电测仪器股份有限公司] (20%)⁹¹⁰

Address:

- No. 16, Yingbin Road, Dahekan Town, Nanzheng County, Hanzhong, Shaanxi Province [陕西省汉中市南郑县大河坎镇迎宾路 16 号] (Hanzhong Base)⁹¹¹
- No. 618, Aerospace South Road, National Civil Aerospace Industry Base, Xi'an, Shaanxi [陕西西安国家民用航天产业基地航天南路 618 号] (Xi'an Base)⁹¹²

Website: <http://www.huayan.avic.com>

Key Data:

- Established: 1970⁹¹³
- Capital: 500 million RMB in registered capital⁹¹⁴
- Items produced: produces over 200 kinds of products in ten categories⁹¹⁵
- Personnel: over 1,000 employees⁹¹⁶
- Floor space: Xi'an base covers 60,000 sqm (90 mu); Hanzhong base covers over 133,333 sqm (200 mu)⁹¹⁷

Overview:

The Shaanxi Huayan Aviation Instrument Co. is a provider of orientation, positioning, attitude, motion control, and navigation systems. It is a professional high-tech enterprise that undertakes the development and production of inertial components, components, inertial navigation systems and attitude systems, and micro-motor products. Its products cover military and civil aviation, aerospace, weaponry, ships, communications, and other fields. Huayan's products include a miniature dynamic tuning gyroscope, high-precision miniature semi-liquid floating gyroscope, and ultra-miniature flexible gyroscope.⁹¹⁸

The company has two bases in Xi'an and Hanzhong, Shaanxi. The Xi'an R&D center focuses on product research and development, market development, and product assembly testing, while the Hanzhong base focuses on precision machining and special processing.⁹¹⁹

Key Personnel:

- Liu Dongping [刘东平]: Chairman; CEO⁹²⁰

10.11.10. SHAANXI QIANSHAN AVIONICS Co., LTD [陕西千山航空电子有限责任公司]

Aliases and Former Names:

- Shaanxi Qianshan Aviation Instrument Co., Ltd. [陕西千山航空仪表有限公司]⁹²¹
- Sha(a)nxi Qianshan Aviation Electronics Co., Ltd.⁹²²

Notable Products/Services: aircraft black boxes and other components⁹²³

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁹²⁴

Address:

- No. 1566, Shenhe 4th Road, Guodu Street, Chang'an District, Xi'an, Shaanxi Province [陕西省西安市长安区郭杜街道神禾四路 1566 号]⁹²⁵
- No. G16, Auxiliary Road, South Third Ring Road, Xi'an, Shaanxi Province
- [陕西省西安市南三环辅道 G16 号]⁹²⁶

Website: <http://www.qianshan.avic.com>

Key Data:

- Established: 1969⁹²⁷
- Assets: 1.4 billion RMB in total assets
- Personnel: over 900 employees
- Floor space: 200,000 sqm⁹²⁸

Overview:

Shaanxi Qianshan Avionics primarily develops airborne flight parameter and audio and video recording systems (commonly known as "black boxes"). Other products include engine indication and aircrew warning systems (EICAS), electromechanical management computers, aircraft integrated data management systems, passenger and cargo compartment information display equipment, helicopter forest fire fighting command systems, and aircraft health diagnosis and prediction systems.⁹²⁹ Qianshan plans to expand into the fields of rail transit, ships, petroleum, and environmental record monitoring.⁹³⁰ It produces military and civilian products. It is divided into its Xi'an headquarters and Hanzhong branch.

Key Personnel:

- Xiong Chunhai [熊春海]: Chairman; CEO⁹³¹

10.11.11. AVIC SHANGHAI ELECTRIC COMPANY LTD [上海航空电器有限公司]

Notable Products/Services: aviation and aerospace power distribution and lighting systems, control panel components and dimming control systems (CPA&DCS), alarm systems, voice recognition systems

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁹³²

Address: No. 6629, Zhongchun Road, Minhang District, Shanghai [上海市闵行区中春路 6629 号]⁹³³

Website: <https://www.sae118.com/>

Key Data:

- Established: 1954⁹³⁴
- Capital: 680 million RMB in registered capital⁹³⁵
- Personnel: over 1,300 employees
- Floor space: nearly 120,000 sqm between Minhang and Jinshan factories⁹³⁶

Overview:

The AVIC Shanghai Electric Co. (SAE) produces power distribution and lighting systems, primarily for aviation and aerospace. The company has five series of products: lighting systems, control panel components and dimming control systems (CPA&DCS), alarm systems, secondary power distribution systems, and voice recognition systems.

The company invests more than 10% of its sales revenue into research and development every year, and more than 40% of its employees are engaged in innovation, research and development. The company has won a number of patents and national defense science and technology progress awards. It has two factories in Minhang and Jinshan.⁹³⁷

Notable Applications:

- Airborne equipment for C919 passenger aircraft
- Control panel components and secondary power distribution system for Xinzhou 700 aircraft⁹³⁸

Known Subsidiaries:

- The company claims 5 holding subsidiaries⁹³⁹

Key Personnel:

- Pu Yi [蒲毅]: Chairman; Party Committee Secretary; Chairman of the Board

- Zhou Pengcheng [周鹏程]: Party Committee Deputy Secretary; CEO
- Huang Yong [黄勇]: Party Committee Member; Deputy CEO
- Liu Chunhua [刘春华]: Party Committee Member; Deputy CEO
- Sun Peng [孙鹏]: Party Committee Member; Deputy CEO
- Zhang Hui [张慧]: Party Committee Member; Deputy CEO; labor union Chairman [工会主席]
- Liu Yang [刘阳]: Party Committee Member; Chief Engineer
- Zhang Yaxin [张雅馨]: Party Committee Deputy Secretary; Discipline Inspection Committee Secretary
- Cai Wei [蔡伟]: Party Committee Member; Chief Accountant⁹⁴⁰

Equipment/Facilities:

- Enterprise technology center
- “Nationally recognized” laboratory
- “Professional-level” laboratory (producing power distribution systems and lighting systems)⁹⁴¹

10.11.12. SHENZHEN NANHANG INDUSTRY GROUP [(中航工业)深圳市南航工业集团]

Aliases and Former Names:

- Shenzhen Nanhang Electronics Industry Limited Company [深圳市南航电子工业有限公司]
- Shenzhen Nanhang Electronics [深圳南航电子]⁹⁴²

Notable Products/Services: military and civil aviation flight instruments, navigation equipment, video image processors, cockpit control display equipment, fuel measurement equipment, communications equipment, UAV equipment, automation instruments, electronic system equipment and software⁹⁴³

Immediate Parent Institution: AVIC Avionics Systems Co., Ltd.

Address: 12th Floor, AVIC China Southern Building, No. 7 Langshan Road, Gaoxin North District, Nanshan District, Shenzhen [深圳市南山区高新北区朗山路 7 号中航工业南航大厦 12 楼]⁹⁴⁴

Website: <http://www.nhdz.com>

Key Data:

- Established: 1980⁹⁴⁵

- Capital: 30 million RMB in registered capital⁹⁴⁶

Overview:

Shenzhen Nanhang has produced products for Chinese helicopters, transport aircraft, special aircraft, general-purpose aircraft, etc. Shenzhen Nanhang focuses on the development of military/civil avionics, high-speed rail/automotive electronics and parts industries, and is involved in land, sea and air photoelectric detection and defense systems.⁹⁴⁷ Products include military and civil aviation flight instruments, integrated and satellite navigation equipment, video image processors, cockpit control display equipment, fuel measurement equipment, radio frequency communication equipment, unmanned aerial vehicle equipment, automation instruments, electronic system equipment and software.⁹⁴⁸

The Company was jointly approved by the former Third Ministry of Machinery Industry and the Guangdong Provincial People's Government in 1980. It is now under AVIC Avionics Systems and a designated enterprise for the development and production of military products approved by the state. It was named an advanced unit of weapons and equipment support for the 60th anniversary of the founding of the People's Republic of China.

Known Subsidiaries:

- China Avionics Engineering Research and Development Center [中国航空电子工程研究中心]
- Shenzhen Hangsheng Electronics Co., Ltd. [深圳市航盛电子股份有限公司]
- Shenzhen Southern Airlines Electronic Technology Co., Ltd. [深圳市南航电子科技股份有限公司]
- Shenzhen Xinpeng Property Management Co., Ltd. [深圳市新鹏物业管理有限公司]⁹⁴⁹
- AVIC Shenzhen Avionics R&D Center [中国航空工业深圳航空电子研发中心]
- Automotive Electronics R&D Center [汽车电子研发中心]
- Military Products Division [军品事业部]
- Optoelectronics Division [光电事业部]
- Real Estate Property Department [房产物业部]
- Beijing Weswell Company [北京韦斯维尔公司]
- Shenzhen Nanhang Measurement and Control Technology Co., Ltd. [深圳南航测控技术有限公司]⁹⁵⁰

Key Personnel:

- Yang Hong [杨洪]: Chairman; CEO
- Duan Zhong [段忠]: Deputy CEO
- Song Hongliang [宋洪良]: Deputy CEO⁹⁵¹

10.11.13. SUZHOU CHANGFENG INSTRUMENTS COMPANY LTD [苏州长风航空电子有限公司]

Aliases and Former Names:

- Suzhou Changfeng Instruments Company Ltd [苏州长风有限责任公司]

Notable Products/Services: avionics integrated display and control technology, aircraft intake control system technology, aircraft and UAV engine measurement control and display technology

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁹⁵²

Address: No. 33, Heshun Road, Suzhou Industrial Park, Suzhou, Jiangsu Province [江苏省苏州市苏州工业园区和顺路 33 号]⁹⁵³

Website: <http://www.szcfi.com/>

Key Data:

- Established: 27 November 1959⁹⁵⁴

Overview:

Suzhou Changfeng Avionics is primarily engaged in R&D of avionics integrated display and control technology, core processing technology for aircraft intake control systems, and engine measurement control and display technology for aircraft and military UAVs. This includes light, small, and ultra-light sports aircraft and airborne avionics systems, display instruments and sensors, as well as special instruments and displays for military and civil aircraft flight simulators.⁹⁵⁵ Its business has since expanded to the non-aeronautical defense and civil fields such as aerospace, weapons, ships, and rail transit.⁹⁵⁶ It is listed as a national key avionics equipment research and development unit.⁹⁵⁷

Notable Collaborations:

International:

- The company's products are exported to the United States, Europe and Australia⁹⁵⁸

Known Subsidiaries:

- Suzhou Changfeng Instrument Co., Ltd. [苏州长风仪表有限公司]
- Suzhou Changfeng Electric Technology Co., Ltd. [苏州长风机电科技有限公司]
- Suzhou Changfeng Textile Electromechanical Technology Co., Ltd. [苏州长风纺织机电科技有限公司]⁹⁵⁹

10.11.14. AVIC SYSTEM CO., LTD [中航系统有限责任公司]

Aliases and Former Names:

- AVIC Systems Corporation [中航系统公司]

Notable Products/Services: avionics, engine systems supporting equipment, aircraft and shipborne electronic information systems, industrial automation and control equipment, intelligent systems and equipment, machinery manufacturing equipment ⁹⁶⁰

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership:

- China Avionics Systems Co., Ltd. [中航航空电子系统有限责任公司] (28.87371%) ⁹⁶¹
- AVIC [中国航空工业集团公司] (percentage unknown)
- Beijing State-owned Capital Operation Management Co., Ltd. [北京国有资本运营管理有限公司] (percentage unknown) ⁹⁶²

Address: Fourth Floor, No. 128, No. 43 District, North Third Ring West Road, Haidian District, Beijing [北京市海淀区北三环西路 43 号六区 128 号四层]⁹⁶³

Key Data:

- Established: 12 November 2009
- Capital: 84.4 million RMB in registered capital⁹⁶⁴

Overview:

AVIC System Co. Ltd. is both an investment management vehicle and a production company for aircraft avionics. It produces engine systems supporting equipment, products and services related to aircraft and shipborne electronic information systems, industrial automation and control equipment, intelligent systems and equipment, as well as machinery manufacturing equipment.⁹⁶⁵

Known Subsidiaries:

- AVIC Avionics Co., Ltd. [中航航空电子有限公司]
 - Established in September 2007 with a registered capital of 240 million RMB. The company is located in Zhongguancun Aviation Science and Technology Park, Haidian District, Beijing. The company's main business scope is avionics systems and related products, including avionics systems integration, aviation sonar, communications and navigation, sensors, intelligent and automatic control, information networks, computers, and other professional fields.⁹⁶⁶

Key Personnel:

- Chen Yuanming [陈远明]: Chairman; CEO
- Che Hong [车宏]: Board member
- Zheng Hong [张红]: Board member
- Shi Feng [史锋]: Board member
- Xu Zhiyong [徐志勇]: Board member⁹⁶⁷

10.11.15. TAIYUAN AERO-INSTRUMENTS CO., LTD. [太原航空仪表有限公司]**Aliases and Former Names:**

- Factory 221 [221 厂]
- AVIC Taihang [航空工业太航]⁹⁶⁸

Notable Products/Services: atmospheric data technology, cockpit displays, parameter alarms, sensors, environmental detection technology⁹⁶⁹

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Corporate Ownership: China Avionics Systems Co., Ltd. [中航航电系统公司] (100%)⁹⁷⁰

Address: No. 137, Bingzhou South Road, Taiyuan, Shanxi Province [山西省太原市并州南路 137 号]⁹⁷¹

Website: www.taihangybc.com

Key Data:

- Established: 1951
- Assets: 820 million RMB in total assets⁹⁷²
- Personnel: over 2,000 employees⁹⁷³
- Floor space: approximately 600,000 sqm⁹⁷⁴

Overview:

The Taiyuan Aviation Instrument Co. products include atmospheric data, cockpit displays, parameter alarms, sensitive components, sensors, and environmental detection.

The company was founded in 1951 and was the first production base for aviation instruments in the PRC. It has a provincial-level technology center in Shanxi Province and a joint laboratory for advanced sensing and testing technology. It is one of the first member units of China's aviation reliability laboratory organization and is also a major international research and development base for advanced elastic sensitive components.⁹⁷⁵

Notable Applications:

- 8 products used in the Shenzhou manned spacecraft, including parts of the environmental control and life support systems, the cabin exit support sub-system, and the body structure sub-system⁹⁷⁶

Key Personnel:

- Zhao Ren [赵稔]: Chairman
- Hu Yongjie [胡勇杰]: CEO⁹⁷⁷

10.11.16. AVIC (XI'AN) AERONAUTICS COMPUTING TECHNIQUE RESEARCH INSTITUTE [航空工业西安航空计算技术研究所]

Aliases and Former Names:

- 631 Institute [631 所]
- (AVIC) Computing Institute [(航空工业)计算所]
- The China Aeronautical Computing Technology Institute [中国航空计算技术研究所]

Notable Products/Services: aircraft and missile computers, ground development tools, aviation software, aviation integrated circuit designs⁹⁷⁸

Immediate Parent Institution: China Avionics Systems Co., Ltd.⁹⁷⁹

Address: No. 15, Jinye 2nd Road, Xi'an, Shaanxi Province [陕西省西安市锦业二路 15 号]⁹⁸⁰

Website: <http://www.actri.com.cn/>

Archived: <https://web.archive.org/web/20080921151734/http://www.actri.com.cn/>

Key Data:

- Established: 1958⁹⁸¹

Overview:

The China Aeronautical Computing Technology Institute (ACTRI) conducts research on aircraft and missile-borne computers, aviation software, and specialized aviation integrated circuit design.⁹⁸² The Institute's products are widely used in aviation, aerospace, shipbuilding, electronics, weapons and other fields.⁹⁸³

The Institute was founded in 1958. It began to recruit and train postgraduates in 1979. At present, it offers majors in the fields of computer science and technology, software engineering, and computational mathematics.⁹⁸⁴

Notable Collaborations:

- Has delivered products to the China Electronics Technology Group Corporation (CETC) [中国电子科技集团公司] as recently as April 2021⁹⁸⁵
- Conducted research exchange with Northwestern Polytechnical University [西北工业大学] (NWPU) on 21 June 2019. On 23 June 2020, the two sides signed an industry-university research cooperation agreement, which includes agreements for postgraduate recruitment, joint demonstration and declarations for major projects, joint declaration of results, joint construction of scientific research platforms, and other exchanges. Before signing the agreement, both sides engaged in exchanges on talent training, scientific research, and various industry services.⁹⁸⁶ In April 2021, the Institute and the NWPU School of Civil Aviation [西北工业大学民航学院] met to discuss the joint construction of a research laboratory.⁹⁸⁷

Key Personnel:

- Ding Kai [丁凯]: Director
- Hu Linping [胡林平]: Party Committee Secretary
- Li Peng [李鹏]: Deputy Director⁹⁸⁸
- Wang Yundong [王运东]: Assistant Director
- Cao Guangfeng [曹广锋]: Deputy CEO of Material Support Center [物资保障中心副总经理]⁹⁸⁹

10.11.17. AVIC XI'AN FLIGHT AUTOMATIC CONTROL RESEARCH INSTITUTE [西安飞行自动控制研究所]

Aliases and Former Names:

- 618 Institute [618 所]
- AVIC Automatic Control Institute [航空工业自控所]

Notable Products/Services: military and civil aviation automatic control systems, including flight control systems (for aircraft, helicopters, UAVs), automation technology, other aircraft components⁹⁹⁰

Immediate Parent Institution: China Avionics Systems Co., Ltd.⁹⁹¹

Address: No.129, Jinye Road, Yanta District, Xi'an, Shaanxi Province [陕西省西安市雁塔区锦业路 129 号]⁹⁹²

Website: <http://www.facri.com/>

Key Data:

- Established: 1960⁹⁹³

Overview:

The AVIC Xi'an Flight Automatic Control Research Institute (FACRI) conducts research on automatic control systems, including flight control systems, automation technology, and other information technology products for both civilian and military use.⁹⁹⁴

The Institute produces automatic flight control systems related to integrated aircraft management, automatic landing, fixed-wing and rotary-wing aircraft fly-by-wire flight control systems, UAV autonomous control systems, and other control systems, as well as civil aircraft electrical flight control systems. It also produces component products related to electronic computers, actuators, software, motors, sensors, laser gyroscopes, fiber optic gyroscopes, accelerometers, and MEMS gyroscopes.⁹⁹⁵

Notable Applications:

- Involved in development of flight control systems for numerous combat aircraft, including the J-10, J-11, J-15, and J-16⁹⁹⁶
- AT200 cargo UAV⁹⁹⁷
- ZLG laser inertial navigation system
- Closed-loop optical fiber inertial navigation systems
- High-precision rotary modulation inertial navigation systems⁹⁹⁸

Notable Collaborations:

- Jointly runs the Defense S&T Key Laboratory of Aircraft Control and Integration Technology [飞行器控制一体化技术国防科技重点实验室] with Beihang University.
 - Researches control systems for aircraft, missiles, satellites, and UAVs⁹⁹⁹
- Worked closely with Sanyi Heavy Machinery [三一重机] to develop the SY365 intelligent excavator [SY365 智能挖掘机], which can perform automatic path planning operations, UAV auxiliary functions, and auxiliary operations such as one-key trenching, leveling, loading, or weighing.¹⁰⁰⁰

Key Personnel:

- Song Kepu [宋科璞]: Director
- Wang Donghui [王东辉]: Deputy Director¹⁰⁰¹

Equipment/Facilities:

- Guidance, Navigation and Control Technology Research Center [制导、导航与控制技术研究中心]

- Science and Technology on Aircraft Control Laboratory/ Key Laboratory for Aircraft Control Integration Science and Technology [飞行器控制一体化技术国防科技重点实验室] (jointly controlled with Beihang University)^{1002 1003}
- Key Laboratory for Aviation Science and Technology [航空科技重点实验室]

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁰⁰⁴
- Present on U.S. Department of Commerce Military End-User List¹⁰⁰⁵
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁰⁰⁶

10.11.18. AVIC XI'AN FLIGHT AUTOMATIC CONTROL TECHNOLOGY CO., LTD. [中航西安飞行自动控制技术有限公司]

Notable Products/Services: control, navigation, guidance systems, hydraulic and electromechanical products, electronics and computer products, optical products

Immediate Parent Institution: China Avionics Systems Co., Ltd.

Address: No. 129, Mianye Road, High-tech District, Xi'an, Shaanxi Province [陕西省西安市高新区锦业路 129 号]¹⁰⁰⁷

Key Data:

- Established: 2011¹⁰⁰⁸

Overview:

The AVIC Xi'an Flight Automatic Control Technology Co. specializes in control, navigation, and guidance systems. It also conducts production, sales, maintenance, and service of hydraulic and electromechanical products, software, electronics and computers, and optical products.¹⁰⁰⁹

10.12. AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司]

Aliases and Former Names:

- 中航机电系统有限公司¹⁰¹⁰
- AVIC Electromechanical [中航机电/航空工业机电]
- Electromechanical Company [机电公司]
- Hubei AVIC Precision Machinery Technology Co., Ltd. [湖北中航精机科技股份有限公司] (former)¹⁰¹¹

Notable Products/Services: aviation electromechanical systems

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership:

- AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (35.87%)
- AVIC Life Support Research Institute [中国航空救生研究所] (10.37%)
- AVIC Aviation Industry Investment Co., Ltd. [中航航空产业投资有限公司] (3%)
- Hong Kong Securities Clearing Company Limited [香港中央结算有限公司] (2.29%)
- China Construction Bank Corporation - E Fund National Defense and Military Industry Hybrid Securities Investment Fund [中国建设银行股份有限公司-易方达国防军工混合型证券投资基金] (1.96%)
- AVIC (1.62%) [中国航空工业集团公司]¹⁰¹²

Address:

- 25th Floor, Building A, Phoenix Landmark Plaza, No. 5 Shuguang Xilijia, Chaoyang District, Beijing [北京朝阳区曙光西里甲5号院凤凰置地广场A座25层]¹⁰¹³
- No. 8, Zuri Road, High-tech Zone, Xiangyang, Hubei Province [湖北省襄阳市高新区追日路8号] (registered address)¹⁰¹⁴

Website: <http://www.avicem.com/>

Archived: <https://web.archive.org/web/20220523075858/http://www.avicem.com/>

Key Data:

- Established: 5 December 2000¹⁰¹⁵
- Capital: 3.6 billion RMB in registered capital¹⁰¹⁶

Overview:

AVIC Electromechanical Systems develops aviation electromechanical systems, including hydraulic systems, fuel systems, environmental control systems, aviation power systems, high lift systems, weapons and suspension launch systems, air conditioning compressors, hyperbaric oxygen chambers, isostatic compressors, and other aviation electromechanical products.^{1017 1018}

AVIC Systems Co., Ltd. [中航工业系统有限责任公司], split into China Avionics Systems Co. [中航航电系统公司] and AVIC Electromechanical Systems Co. [中航机电系统公司] in 2010. In 2018, the two re-merged to form AVIC Aerospace Systems [中航机载系统有限公司], while apparently still existing as independent entities.¹⁰¹⁹

Notable Applications:

Participated in the research and development of 21 types of airborne products for domestic civil aircraft, including:

- C919 civilian aircraft
- Jiaolong AG600 amphibious aircraft
- Changjiang series engines
- MA700 turboprop civilian aircraft¹⁰²⁰

Notable Collaborations:

International:

- The company claims to have established long-term cooperative relations with GE-AS, Parker, UTAS, Honeywell, Goodrich, Eaton, MOOG, and many other world-renowned aviation and airborne equipment companies¹⁰²¹

Known Subsidiaries:¹⁰²²

- Hubei AVIC Precision Machinery Technology Co., Ltd. [湖北中航精机科技股份有限公司]
- Qing'an Group Co., Ltd. [庆安集团有限公司]
- Shaanxi Aero Electric Co., Ltd. [陕西航空电气有限责任公司]
- Zhengzhou Aircraft Equipment Co., Ltd. [郑州飞机装备有限责任公司]
- Guizhou Fenglei Aviation Ordnance Co., Ltd. [贵州风雷航空军械有限责任公司]
- Guizhou Fengyang Hydraulic Co., Ltd. [贵州枫阳液压有限责任公司]
- Sichuan Fanhua Aviation Instrument Co., Ltd. [四川泛华航空仪表电器有限公司]
- Yibin Sanjiang Machinery Co., Ltd. [宜宾三江机械有限责任公司]
- Xinxiang Aviation Industry (Group) Co., Ltd. [新乡航空工业(集团)有限公司]
- Shaanxi Changkong Gear Co., Ltd. [陕西长空齿轮有限责任公司]
- (AVIC) Wuhan Aviation Instrument Co., Ltd. [(中航工业)武汉航空仪表有限责任公司]
- 609 Institute / China Aviation Industry Corporation Jincheng Nanjing Electromechanical Hydraulic Engineering Research Center / China Aviation Accessories Research Institute [609所 / 中国航空工业集团公司金城南京机电液压工程研究中心 / 中国航空附件研究所]
- Nanjing Hangjian Aviation Equipment Technology Service Co., Ltd. [南京航健航空装备技术服务有限公司]
- AVIC Tianjin Aviation Electromechanical Co., Ltd. [(中航工业)天津航空机电有限公司]
- Ya'an Fanhua Technology Development Co., Ltd. [雅安泛华科技开发有限责任公司]
- AVIC Shanghai Aviation Special Vehicle Manufacturing Co., Ltd. [(中航工业)上海航空特种车辆有限责任公司]
- Hilite International [海力达/海力达汽车系统(常熟)有限公司]
- AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] – listed company/incarnation¹⁰²³
- Honghang [宏航公司/襄阳宏航实业有限责任公司] (status of this entity unclear)

Key Personnel:

- Wang Shugang [王树刚]: Chairman; CEO; legal representative¹⁰²⁴

Equipment/Facilities:

- Over a thousand sets of CNC equipment, with CNC machining equipment rate over 80%
- 24-hour fully-automated "black light factory"
- Domestic aviation power supply system
- High lift system
- Fuel environment control system
- Flight control mechanical control system
- Cargo system
- Suspension launcher
- Other large-scale semi-physical simulation test platforms with multiple degrees of freedom¹⁰²⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁰²⁶

10.12.1. GUIZHOU FENGLI AVIATION ORDNANCE CO., LTD. [贵州风雷航空军械有限责任公司]

Notable Products/Services: aircraft pylons, hooks, missile launch pads, aviation rocket launchers, ground testing equipment, hyperbaric and hypobaric chambers, environmental test equipment, other military and civilian products¹⁰²⁷

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹⁰²⁸

Address: Yaopu Town, Economic and Technological Development Zone, Anshun, Guizhou Province [贵州省安顺市经济技术开发区幺铺镇]¹⁰²⁹

Website: www.flyhbo.cn

Key Data:

- Established: 1970¹⁰³⁰
- Capital: 304.54 million RMB in registered capital¹⁰³¹
- Personnel: over 1,000 employees¹⁰³²

Overview:

Guizhou Fenglei Aviation Ordnance Co., Ltd. focuses on the development and production of medical hyperbaric oxygen chambers, hypobaric chambers, environmental test equipment, and other military and civilian products. Guizhou Fenglei's military products include aircraft general pylons, hooks, missile launch pads, aviation rocket launchers, ground testing equipment, etc.¹⁰³³

The company has several R&D platforms, including the Provincial Enterprise Technology Center [省级企业技术中心], Guizhou Provincial Pressure and Medical Oxygen [贵州省压力与医氧], the Pressure and Environmental Technology Engineering Technology Research Center [压力与环境科技工程技术研究中心], and the Guizhou Provincial Industrial Design Center [贵州省工业设计中心]. The company's headquarters is in Nanma Square, Anshun City, Guizhou Province. The production base is located in Anshun City Economic and Technological Development Zone, close to Louhu City Wetland Park and Huangguoshu Airport.¹⁰³⁴

Key Personnel:

- Qi Jianfei [齐剑飞]: Executive Director¹⁰³⁵

Equipment/Facilities:

- Provincial Enterprise Technology Center [省级企业技术中心]
- Guizhou Provincial Pressure and Medical Oxygen [贵州省压力与医氧]
- Pressure and Environmental Technology Engineering Technology Research Center [压力与环境科技工程技术研究中心]
- Guizhou Provincial Industrial Design Center [贵州省工业设计中心]¹⁰³⁶

10.12.2. GUIZHOU FENGYANG HYDRAULIC COMPANY LTD [贵州枫阳液压有限责任公司]**Aliases and Former Names:**

- Factory 183 [一八三厂]

Notable Products/Services: aero-engine components, parts for aircraft fuel, power, hydraulic, air pressure, flight control, and takeoff and landing systems

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹⁰³⁷

Address: No. 2, Songhuajiang Road, Xiaohe, Guiyang, Guizhou Province [贵州省贵阳市小河松花江路2号]¹⁰³⁸

Website: <http://www.hdyycjx.com/>

Key Data:

- Established: 1967¹⁰³⁹
- Capital: 216.04 million RMB in registered capital
- Personnel: over 1,100 employees¹⁰⁴⁰

Overview:

The Guizhou Fengyang Hydraulic Co. (GFZYYY) produces a range of products for China’s aerospace, hydraulic and pneumatic, and construction machinery industries. These include aero-engine components and parts for aircraft fuel, power, hydraulic, air pressure, flight control, aero-engine components, special parts for aircraft fuel systems and aircraft second power units, aviation hydraulic controls/actuators and other hydraulic components for weapons and equipment, aviation air pressure control components and accessories, special parts for flight control systems, special parts for aircraft take-off and landing systems, valves, accumulators, shock absorbers, pipeline systems, gas cylinders, aircraft brake systems, liquid rocket engine components, ramjet engine components, and takeoff and landing systems.^{1041 1042}

Notable Collaborations:

International:

- Claims that its products are exported to Europe, the United States, and other regions¹⁰⁴³

Key Personnel:

- Jiang Zhengxiong [蒋正雄]: Chairman; CEO
- Ren Xiaodi [任晓笛]: Board Member
- Li Yunliang [李云亮]: Board Member
- Wang Qian [王黔]: Board Member
- Li Yong [李勇]: Board Member¹⁰⁴⁴

Equipment/Facilities:

- CAD, CAM, CAPP, and CAE are “widely used” for product development needs
- Guizhou Fengyang Hydraulic General Plant Heat Treatment Branch Plant [贵州枫阳液压总厂热表处理分厂]
- Guangzhou Marketing Department of Guizhou Fengyang Hydraulic Factory [贵州枫阳液压总厂广州营销部]¹⁰⁴⁵
- More than 900 sets of various processing and testing equipment, a large number of which is imported from the United States, Germany, Switzerland, Italy, Japan, Taiwan, and other locations¹⁰⁴⁶

10.12.3. AVIC HUBEI AVIATION PRECISION MACHINERY TECHNOLOGY CO., LTD. [湖北中航精机科技股份有限公司]

Notable Products/Services: seating products, fine-blanking products, precision stamping dies¹⁰⁴⁷

Immediate Parent Institution: AVIC Electromechanical Systems Co., Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co., Ltd. [中航工业机电系统股份有限公司] (100%)¹⁰⁴⁸

Address: No. 8, Zhuiji Road, High-tech Development Zone, Xiangyang, Hubei Province [湖北省襄阳市高新技术开发区追日路 8 号]¹⁰⁴⁹

Website: <http://www.hapm.cn/>

Key Data:

- Established: 2000¹⁰⁵⁰
- Items produced: annual production capacity of 5.5 million seat recliners, 1 million seat tracks, 150 million fine blanked parts, and 80 sets of large fine blanking¹⁰⁵¹
- Personnel: approximately 900 employees¹⁰⁵²
- Floor space: 80,000 sqm (120 mu)¹⁰⁵³

Overview:

AVIC Hubei Aviation Precision Machinery Technology (HAPM) develops and produces seat precision adjustment devices, seat frames, seat tracks, fine-blanking products, and precision stamping dies.¹⁰⁵⁴ It is the biggest production base for fine blanking products in China and has the highest domestic market share for its recliner products. Besides domestic customers, export destinations include Australia, Iran, Malaysia, Thailand, Mexico, Canada, Argentina, and the US. The company also has factories in Thailand, Germany, Czechia, and Poland.¹⁰⁵⁵ It may have a subsidiary with nearly the same name [湖北中航精机科技有限公司].

Notable Collaborations:

International:

- Has allegedly worked with Johnson (USA), Lear (USA), Ford (USA), KEIPER (Germany), FEINTOOL (Switzerland)¹⁰⁵⁶

Key Personnel:

- Wang Shugang [王树刚]: CEO¹⁰⁵⁷

10.12.4. AVIC NANJING ENGINEERING INSTITUTE OF AIRCRAFT SYSTEMS [航空工业金城南京机电液压工程研究中心]

Aliases and Former Names:

- 609 Institute [609 所]
- AVIC NEIAS [航空工业南京机电]
- Nanjing Electromechanical Hydraulic Engineering Research Center [南京机电液压工程研究中心]
- China Aviation Accessories Research Institute [中国航空附件研究所] (former)

Notable Products/Services: airborne electromechanical and hydraulic products

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.¹⁰⁵⁸

Address: 33 Shuige Road, Jiangning Economic & Technological Development Zone, Nanjing, Jiangsu Province [江苏省江苏省南京市江宁区水阁路 33 号]¹⁰⁵⁹

Website: <https://neias.cn/> or <https://en.neias.cn/> (English)

Archived: <https://web.archive.org/web/20211208085941/https://neias.cn/>

Archived: <https://web.archive.org/web/20221216220100/https://en.neias.cn/>

Key Data:

- Established: 1961¹⁰⁶⁰
- Personnel: over 3,000 employees, including over 40 researchers, over 300 senior professional and technical personnel, over 600 mid-level professionals and technicians¹⁰⁶¹

Overview:

The AVIC Nanjing Engineering Institute of Aircraft Systems (AVIC NEIAS) is a research and production base for airborne electromechanical systems and products as well as AVIC's R&D center for aero electromechanical & hydraulic technology. Areas of research include: aircraft electromechanical control systems, aircraft hydraulic control systems, aircraft fuel systems, aircraft environmental control systems, aircraft second power systems, and aircraft power transmission systems.¹⁰⁶²

It has provided products and supporting accessories for more than 60 models of 37 major electromechanical systems, including aerial refueling equipment, constant speed transmission, emergency power units, air turbine starters, gas turbine starters, high-pressure water removal environmental control systems, three-wheel turbine coolers, high-performance electro-hydraulic servo valves, fuel pumps, and aircraft ground control systems.¹⁰⁶³

In February 2019, the Institute's aircraft electro-systems (national) megaproject [机载系统重大专项项目] received significant funding for high-end aviation equipment manufacturing and aviation innovation as part of the Nanjing Airport Economic Demonstration Zone [南京临空经济示范区] project. The project is mainly focused on the research and development, manufacturing,

and sales of civil aircraft fuel systems, hydraulic systems, environmental control systems, and auxiliary secondary power.¹⁰⁶⁴

AVIC NEIAS is an entity comprised of the former CRIAA (China Research Institute of Aero-accessories) and the aviation division of Jincheng Corporation. The predecessor of NEIAS was founded in 1961 as the Third Research Institute of the 6th Academy [六院三所] in Luoyang, Henan Province. In 2001, the current Nanjing Engineering Institute of Aircraft Systems was formed from the merger of the 609th Institute and the aviation division of Factory 511 [511 厂]. The new institute was based at five locations in Jiangsu and Hubei provinces. It may have subsidiaries.

Notable Applications:

- License for maintenance of civil aviation products for more than 1,000 accessories of various models, including Boeing series, Airbus series, TY-154, BAE-146, etc.
- Provides fuel, hydraulic, environmental control and other systems for C919, Boeing, and Airbus series aircraft.¹⁰⁶⁵

Notable Collaborations:

Domestic:

- Student groups and faculty from the Nanjing University of Aeronautics and Astronautics School of Automation [南京航空航天大学自动化学院] visited the school to encourage cooperation. Numerous alumni from the school are currently working at the Institute.¹⁰⁶⁶

International:

- Has worked with Parker, Safran, Liebherr, Honeywell, UTC Aerospace Systems, and Aversan¹⁰⁶⁷

Key Personnel:

- Jiao Yusong [焦裕松]: Director
- Cheng Lijia [程立嘉]: Deputy Director; Chief Engineer¹⁰⁶⁸

Equipment/Facilities:

- Manufacturing center [制造中心]¹⁰⁶⁹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁰⁷⁰

10.12.5. NANJING HANGJIAN AVIATION EQUIPMENT TECHNOLOGY SERVICE CO., LTD. [南京航健航空装备技术服务有限公司]

Notable Products/Services: aviation electromechanical, hydraulic, fuel, environmental control, and power products

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd

Address: No.1, Zhongke Road, Jiangning District, Nanjing, Jiangsu Province [江苏省南京市江宁区中科路一号]

Overview:

Nanjing Hangjian Aviation Equipment Technology Service Co., Ltd. (Nanjing Hangjian) works in the fields of aviation electromechanical hydraulic products and equipment. Products include aircraft airborne electromechanical integrated control systems, environmental control systems, secondary power systems, hydraulic control systems, and fuel systems. Repair services are provided for more than one hundred products.¹⁰⁷¹

10.12.6. QING'AN GROUP CO., LTD. [庆安集团有限公司]

Aliases and Former Names:

- Factory 114 [114 厂]

Notable Products/Services: aerospace airborne equipment, including mechanical, hydraulic, pneumatic, electronic, and electrical devices and control systems for military aviation

Immediate Parent Institution: AVIC Electromechanical Systems Co., Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co., Ltd. [中航工业机电系统股份有限公司] (100%)¹⁰⁷²

Address: No. 628, Daqing Road, Lianhu District, Xi'an, Shaanxi Province [陕西省西安市莲湖区大庆路 628 号]¹⁰⁷³

Website: www.qingan.com.cn

Key Data:

- Established: 1955¹⁰⁷⁴
- Capital: 1.99 billion RMB in registered capital
- Personnel: over 4,200 employees¹⁰⁷⁵
- Floor space: 371,000 sqm¹⁰⁷⁶

Overview:

AVIC Qing'an Group is mainly responsible for the development and production of aerospace airborne equipment, including mechanical, hydraulic, pneumatic, electronic, and electrical devices and control systems for military aviation. It also produces parts for civil aviation flight control, power supply, wheel brakes, and landing gear retraction systems. In the non-aviation field, it is engaged in development and production of air-conditioning compressors.¹⁰⁷⁷

Founded in 1955, AVIC Qing'an was one of the 156 key construction projects in the First Five-Year Plan period.¹⁰⁷⁸ It is located in Xi'an, the capital of Shaanxi Province.

Notable Collaborations:*International:*

- Has allegedly worked with GE-AS, Goodrich, Eaton, and Moog¹⁰⁷⁹

Key Personnel:

- An Gang [安刚]: Chairman
- Dong Kegong [董克功]: CEO¹⁰⁸⁰

Equipment/Facilities:

- National-level enterprise technology center
- Two post-doctoral research stations
- Three research institutes for aviation products, refrigeration equipment, and testing technology
- National first-class measurement center
- National first-class physical and chemical laboratory
- Regional environmental test center¹⁰⁸¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁰⁸²

10.12.7. SHAANXI AERO ELECTRIC Co., LTD. [陕西航空电气有限责任公司]**Aliases and Former Names:**

- Factory 115 [115 厂]
- Qinling Electric Factory [秦岭电工厂] (former)
- Qinling Electric Company [秦岭电气公司] (former)
- Shaanxi Qinling Aviation Electric Company [陕西秦岭航空电气公司] (former)¹⁰⁸³

Notable Products/Services: aircraft power supply, distribution, and ignition systems

Immediate Parent Institution: AVIC Electromechanical Systems Co., Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹⁰⁸⁴

Address:

- No. 17, Jinye 2nd Road, High-tech Zone, Xi'an, Shaanxi Province [陕西省西安市高新区锦业二路 17 号]
- No. 45, Xicheng District, Xingping City, Xianyang, Shaanxi Province [陕西省咸阳市兴平市西城区 45 号信箱]¹⁰⁸⁵

Website: <http://www.saec.avic.com/>

Key Data:

- Established: 1955¹⁰⁸⁶
- Personnel: over 4,800 employees¹⁰⁸⁷
- Floor space: 1.45 million sqm¹⁰⁸⁸

Overview:

Shaanxi Aviation Electric Co. (SAEC) is an R&D center and production base for China's aviation power supply systems and engine ignition systems, specializing in the development and production of various types of aircraft main power supply systems, power distribution systems, secondary power supply systems, motor systems, and engine ignition systems. The company is also widely involved in aerospace, ship, weaponry, and other military and civil fields.¹⁰⁸⁹

The company was founded in 1955. It was one of the 156 key projects constructed during China's "First Five-Year Plan" period. The company currently consists of two parts: R&D and manufacturing. The R&D center is located in Xi'an High-tech Industrial Development Zone. The production base is located in Xingping City, Shaanxi Province.

Notable Applications:

- Main power systems for the COMAC C919 aircraft¹⁰⁹⁰

Notable Collaborations:

International:

- Joint venture with U.S. company UTC Aerospace Systems to create Xi'an AVIC Hansen Aviation Power Co., Ltd. [西安中航汉胜航空电力有限公司]
 - Established as a joint venture between Shaanxi Aero Electric and UTAS.¹⁰⁹¹ In 2015, the company became wholly owned by Shaanxi Aero Electric Co. and changed its name to Xiamen Hansheng Qinling Aerospace Co., Ltd. [厦门中航秦岭宇航有限公司].¹⁰⁹²
- Collaborations with U.S. companies General Electric and Honeywell¹⁰⁹³

Known Subsidiaries:

- Shaanxi Qinling Special Electric Co., Ltd. [陕西秦岭特种电气有限责任公司]
- Shaanxi Qinling Special Motor Co., Ltd. [陕西秦岭特种电机有限责任公司]
- Shaanxi Qinhang Electromechanical Co., Ltd. [陕西秦航机电有限责任公司]
- Xi'an Qinling Civil Aviation Electric Power Co., Ltd. [西安秦岭民用航空电力有限公司]
- Xiamen AVIC Qinling Aerospace Co., Ltd. [厦门中航秦岭宇航有限公司]
- Xi'an AVIC Hansen Aviation Power Co., Ltd. [西安中航汉胜航空电力有限公司]

Key Personnel:

- Yang Weiping [杨卫平]: Chairman; Party Secretary
- Xu Qiang [徐强]: CEO; Deputy Party Secretary
- Meng Haiying [蒙海鹰]: Chief Engineer; Deputy CEO¹⁰⁹⁴

Equipment/Facilities:

- Aviation Industry Aviation Power System R&D Center [航空工业航空电力系统研发中心]
- AVIC Aviation Power System Division [中航机电航空电力系统事业部]¹⁰⁹⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁰⁹⁶
- Present on U.S. Department of Commerce Military End-User List¹⁰⁹⁷

10.12.8. SHAANXI CHANGKONG GEAR CO., LTD. [陕西长空齿轮有限责任公司]**Aliases and Former Names:**

- State-owned Changkong Precision Machinery Manufacturing Company [国营长空精密机械制造公司]¹⁰⁹⁸
- Changkong Gear

Notable Products/Services: fine and middle mold gears and transmission components

Immediate Parent Institution:

- AVIC Electromechanical Systems Co. Ltd. (under trusteeship [托管])¹⁰⁹⁹

Corporate Ownership:

- Hanzhong Hanhang Electromechanical Co., Ltd. [汉中汉航机电有限公司] (100%)¹¹⁰⁰

Address: No. 108, Tianhan Avenue, Dahekan Town, Nanzheng District, Hanzhong, Shaanxi Province [陕西省汉中市南郑区大河坎镇天汉大道 108 号]¹¹⁰¹

Website: <https://www.ck-gear.com/>

Key Data:

- Established: 1969 (in original form), 1990 (current form)¹¹⁰²
- Assets: 344 million RMB in fixed assets¹¹⁰³
- Items produced: annual production capacity of 50 million small module gears, 4 million medium module gears, 2 million sets of gear reducers¹¹⁰⁴
- Personnel: over 1,000 employees¹¹⁰⁵
- Floor space: 49,000 sqm, with construction area of 30,800 sqm, and research and production area of 19,800 sqm¹¹⁰⁶

Overview:

Shaanxi Changkong Gear (CK Gear) manufactures fine and middle mold gears and transmission components, which are used in aviation, spaceflight, electronics, weaponry, nuclear power, shipping, automobiles, electric vehicles, textiles, printing, and other industries.¹¹⁰⁷

CK Gear was founded in 1969 as the State-Owned Changkong Precision Machinery Manufacturing Company and then reorganized in 1990 as Shaanxi Changkong Gear Co., Ltd. It is now the deputy director unit of the “Small Module Gear Working Committee of China Gear Professional Association.”¹¹⁰⁸ Besides China, Changkong Gear's products are sold in Europe, USA, Japan, South Korea, and Taiwan.¹¹⁰⁹

Key Personnel:

- Guo Qiyue [郭起跃]: Chairman
- Zhou Limin [周利民]: CEO¹¹¹⁰

10.12.9. SHANGHAI AVIATION SPECIAL VEHICLE MANUFACTURING CO., LTD. [上海航空特种车辆有限责任公司]

Notable Products/Services: special vehicles, including military and police vehicles

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Address: No.758, Fulian Road, No.1 Industrial Park, Gucun Town, Baoshan District, Shanghai [上海市宝山区顾村镇一号工业园区富联路 758 号]¹¹¹¹

Website: <http://chsav.com/>

Archived: <https://web.archive.org/web/20190717055644/http://chsav.com/>

Overview:

Shanghai Aviation Special Vehicle Co., Ltd. designs and manufactures various special vehicles. The company has main product series involving more than 100 models, including for sanitation vehicles, fire trucks, military and police vehicles, vans, RVs and semi-trailers.¹¹¹²

10.12.10. SICHUAN AVIATION INDUSTRY CHUANXI MACHINERY CO., LTD. [四川航空工业川西机器有限责任公司]**Aliases and Former Names:**

- AVIC Chuanxi

Notable Products/Services: ultra-high pressure technologies, isostatic pressing equipment¹¹¹³

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.¹¹¹⁴

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹¹⁵

Address:

- No. 186, Yuanqu Avenue, Mingshan District, Ya'an, Sichuan Province [四川省雅安市名山区园区大道 186 号]¹¹¹⁶
- No. 155, Kangzang Road, Yucheng District, Ya'an, Sichuan Province [四川省雅安市雨城区康藏路 155 号]¹¹¹⁷

Website: <http://chuan-xi.com>

Key Data:

- Established: 1965, restructured in 2007¹¹¹⁸
- Personnel: over 700 employees
- Floor space: 183,000 sqm, including a building area of 54,000 sqm¹¹¹⁹

Overview:

The Sichuan Aviation Industry Chuanxi Machinery Co. conducts R&D on isostatic pressing equipment and ultra-high-pressure technology. The isostatic pressing equipment developed by the company is widely used in key national defense and high-tech fields such as aerospace, the nuclear industry, weaponry, electronics, metallurgical building materials, ceramics, refractory materials, magnetic materials, medicine, food, and other industries.^{1120 1121}

Key Personnel:

- Zheng Ge [郑革]: Chairman
- Wu Xiaoping [吴小平]: CEO
- Du Yi [杜毅]: Deputy CEO¹¹²²

10.12.11. SICHUAN FANHUA AVIATION INSTRUMENT ELECTRIC CO., LTD. [四川泛华航空仪表电器有限公司]**Aliases and Former Names:**

- Factory 205 [205 厂]
- AVIC Fanhua [中航工业泛华]
- Sichuan Aviation Instrument and Electric Appliance Factory [四川航空仪表电器厂] (former)

Notable Products/Services: aviation fuel measurement and control systems, aero-engine ignition systems¹¹²³

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹²⁴

Address: No. 389, Xingye Road, Industrial East District, Xindu District, Chengdu, Sichuan Province [四川省成都市新都区工业东区兴业路 389 号]¹¹²⁵

Website: <http://www.avicfanhua.com.cn>

Key Data:

- Established: 1982, re-organized 1996¹¹²⁶
- Assets: 1.139 billion RMB in total assets (2018)
- Personnel: total unknown, 346 professional and technical personnel
- Floor space: 116,000 sqm (174 mu), total constructed area of over 45,000 sqm¹¹²⁷

Overview:

AVIC Sichuan Fanhua Aviation Instrument & Electric Co. (AVIC Fanhua) specializes in developing and producing aviation fuel measurement and control systems and aero-engine ignition systems, including for fuel thermal management, fuel refueling control, fuel flow measurement, fuel oil measurement, fault diagnosis and isolation, function reconstruction, information fusion, aircraft center of gravity auxiliary control, and fuel level warning. These systems cover a wide range of domestic aircraft.¹¹²⁸ In 2012, AVIC Fanhua had a 98% domestic market share for

aviation fuel management and control systems.¹¹²⁹ Other products include aviation ground inspection and test equipment and industrial robots.¹¹³⁰

AVIC Fanhua was formed when the Sichuan Aviation Instrument Factory and Sichuan Aviation Electric Appliance Factory merged in Ya'an in 1996. The merged company was originally called Sichuan Aviation Instrument and Electric Appliance Factory. In 2008, the main and auxiliary industries were separated and the auxiliary industries were restructured, and the military and civilian products were operated separately. In 2010, it was restructured into Sichuan Fanhua Aviation Instrument Electric Co., Ltd. In 2012, through a major asset reorganization, AVIC Fanhua became a wholly-owned subsidiary of AVIC Electromechanical Systems Co., Ltd. In 2014, it was relocated from Ya'an to Xindu District, Chengdu.

Notable Applications:

- Has the license to maintain the aircraft fuel monitoring and control systems for the TB-20, Y-7, Y-12, Y-8C, Z-9, Z-11, Kitty Hawk 500, and other civil aircraft¹¹³¹

Notable Collaborations:

- In 2012, AVIC Fanhua was a top supplier of aero engine ignition systems to GE in the Asia-Pacific region¹¹³²

Known Subsidiaries:

- Sichuan Fanhua Electric Co., Ltd. [四川泛华电器有限责任公司]
- Ya'an Xiaohang Electric Co., Ltd. [雅安小航电器有限责任公司]
- Ya'an Xinghang Industrial Co., Ltd. [雅安兴航实业有限责任公司]
- Ya'an Huawei Investment Co., Ltd. (Sichuan West Hospital) [雅安华卫投资有限责任公司 (川西医院)]
- Sichuan Xinchuan Aviation Instrument Co., Ltd. [四川新川航空仪器有限公司]¹¹³³

Key Personnel:

- Yang Guangming [杨光明]: Chairman
- Liu Tao [刘涛]: CEO¹¹³⁴

Equipment/Facilities:

- Factory (Party Committee) Office
- Assets Enterprise Management Department
- Human Resources Department
- Finance Department
- Business Planning Department

- Science and Technology Department
- Product R&D Center
- Technical Quality Department
- Material Supply Department
- Infrastructure Logistics Department
- Safety and Environmental Protection Department
- Corporate Culture Ministry
- Measurement and Control Technology Research Institute
- Ignition Technology Research Institute
- Sensor Technology Research Institute
- The production unit is equipped with a mechanical processing branch, a heat treatment branch, and a product assembly branch¹¹³⁵

10.12.12. SICHUAN LINGFENG AVIATION HYDRAULIC MACHINERY CO., LTD. [四川凌峰航空液压机械有限公司]

Notable Products/Services: airborne hydraulic products

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Address: No.1, Guangdong Road East Section 2, Guanghan City, Deyang, Sichuan Province [四川省德阳市广汉市广东路东二段 1 号]¹¹³⁶

Website: <http://www.zhyy.sc.cn/index.html>

Archived: <https://web.archive.org/web/20150331204952/http://www.zhyy.sc.cn/index.html>

Key Data:

- Established: 1966¹¹³⁷
- Personnel: over 1,000 employees, including over 200 mid-level and senior engineers and technicians
- Floor Space: 250,000 sqm¹¹³⁸

Overview:

The AVIC Sichuan Lingfeng Aviation Hydraulic Machinery Co. (AVIC Lingfeng) develops and produces airborne precision hydraulic products. These products mainly including: aircraft hydraulic booster, hydraulic accumulator, actuator, hydraulic damper, digital front wheel turning anti-sway system, hydraulic actuator, small and medium aircraft landing gear, door drive device and aviation ground maintenance support equipment.¹¹³⁹

The company is located in the Chengdu-Chongqing economic circle, located in the high-tech industrial park of Guanghan City, 22 kilometers from Chengdu.

10.12.13. TIANJIN AVIATION ELECTRO-MECHANICAL CO. LTD. [天津航空机电有限公司]

Aliases and Former Names:

- State-owned 105th Factory [国营第 105 厂]
- Tianjin Aviation Electromechanical [天津航空机电]
- (AVIC) Jindian [(航空工业)津电]
- Tianjin Aviation [天津航空]

Notable Products/Services: military and civil aircraft power distribution systems, fire suppression and protection systems, ignition systems, anti-/de-icing systems, air management systems, circuit breakers, environmental control systems^{1140 1141}

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.¹¹⁴²

Corporate Ownership: AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (100%)¹¹⁴³

Address: No. 5, West 10th Road, Airport Logistics Processing Zone, Tianjin [天津市空港物流加工区西十道 5 号]¹¹⁴⁴

Website: <https://www.tjaemc.com/>

Key Data:

- Established: 1953
- Assets: 4.2 billion RMB in total assets¹¹⁴⁵
- Items produced: nearly 1,000 aviation electrical products¹¹⁴⁶
- Personnel: over 1,600 employees
- Floor space: 160,000 sqm¹¹⁴⁷

Overview:

The Tianjin Aviation Electromechanical Co. (TJAEMC) was established in 1953 as China's first large state-owned enterprise manufacturing aviation electrical appliances. The company's main business includes defense and civil aviation, as well as long-term investment and production service industry. The company's aviation defense sector is mainly engaged in the production and development of aircraft primary and secondary power distribution systems, anti-fire suppression systems, ignition systems, anti-/de-icing systems, and air management systems.¹¹⁴⁸ These components are used in combat aircraft, large transport aircraft, helicopters, early warning aircraft, unmanned aerial vehicles, and general-purpose aircraft.¹¹⁴⁹

TJAEMC is a leader in intelligent power distribution technology. It is China's only manufacturer of aviation fire protection systems and aviation circuit breakers. It has built the only national-level aviation fire suppression experimental platform in China and is a main domestic supplier of air management, liquid cooling display control, and heating control systems. It also produced China's first digital ignition system.¹¹⁵⁰

The company has assisted and chartered the construction of Factory 115, Factory 305, and Factory 315, making significant contributions to the development of China's aviation industry.¹¹⁵¹

Notable Applications:

- Components for the Q-5 and J-8 combat aircraft¹¹⁵²

Notable Collaborations:

- Tianjin Merlin Gerland Co., Ltd. [天津梅兰日兰有限公司]
- Shanghai Schneider Low Voltage Terminal Electric Co., Ltd. [上海施耐德低压终端电器有限公司]
- Schneider Electric Low Voltage (Tianjin) Co., Ltd. [施耐德电气低压（天津）有限公司]¹¹⁵³

Known Subsidiaries:

- Tianjin Tianli Aviation Electromechanical Co., Ltd. [天津天利航空机电有限公司]
- Tianjin Tianhang Electromechanical Industrial Development Company [天津天航机电实业发展公司]
- Tianjin Hangfei Technology and Trade Development Center [天津市航飞科贸发展中心]
- Tianjin Aviation Electromechanical Company Jinxi Electrical Equipment Factory [天津航空机电公司津西电器设备厂]¹¹⁵⁴

Key Personnel:

- Wang Minqiang [王民强]: Chairman¹¹⁵⁵

10.12.14. WUHAN AVIATION INSTRUMENT CO., LTD. [(中航工业)武汉航空仪表有限责任公司]

Aliases and Former Names:

- AVIC 181 [中航 181]

Notable Products/Services: aerospace components and accessories, including for aircraft anti-icing, atmospheric data measurement, pressure sensor testing, ejection seats, program-controlled/air-dropping technology¹¹⁵⁶

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹⁵⁷

Address: No. 2 Donghu East Road, Hongshan District, Wuhan, Hubei Province [湖北省武汉市洪山区东湖东路 2 号]¹¹⁵⁸

Website: <http://www.waicys.cn:80/> (apparently defunct)

Archived: <https://web.archive.org/web/20130916003630/http://www.waicys.cn:80/>

Key Data:

- Established: 1962¹¹⁵⁹
- Capital: 163 million RMB in registered capital¹¹⁶⁰
- Personnel: over 1,000 employees¹¹⁶¹

Overview:

The Wuhan Aviation Instrument Co. is mainly engaged in the research, development and production of aircraft anti-icing technology, atmospheric data measurement technology, pressure sensor testing of hydraulic, fuel, and environmental control systems, ejection seats, and program-controlled/air-dropping technology. Its technologies are widely used in aviation, aerospace, weaponry, ships, and other industries.¹¹⁶²

The company was founded in 1962. It is located in the core area of the Wuhan "Optics Valley," Donghu National Innovation Demonstration Zone.¹¹⁶³

Known Subsidiaries:

- Wuhan AVIC Sensing Technology Co., Ltd. [武汉中航传感技术有限公司]¹¹⁶⁴

Key Personnel:

- Zheng Jun [郑军]: CEO; Executive Director¹¹⁶⁵

Equipment/Facilities:

- "First-class" general aviation instrument ice wind tunnel
- "Dozens" of high-precision CNC machining centers.¹¹⁶⁶

10.12.15. AVIC XINXIANG AVIATION INDUSTRY (GROUP) CO., LTD. [新乡航空工业(集团)有限公司]

Aliases and Former Names:

- Xinhang Group [新航集团]

Notable Products/Services: aircraft environmental control technology, fluid pollution technology, fluid pressure and flow control technology, fluid heat exchange and metal sheet welding technology, electronic equipment cooling technology, high-mesh wire mesh weaving technology¹¹⁶⁷

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹⁶⁸

Address: No. 168, Jianshe Middle Road, Xinxiang, Henan Province [河南新乡建设中路 168号]¹¹⁶⁹

Website: <https://www.xhjt.com.cn/>

Key Data:

- Established: 2004¹¹⁷⁰
- Capital: 428 million RMB in registered capital¹¹⁷¹
- Personnel: nearly 10,000 employees including over 3,900 professional and technical personnel¹¹⁷²

Overview:

The Xinxiang Aviation Industry Group (Xinhang Group) is mainly engaged in the research and production of aviation airborne equipment and auto parts. Xinhang's core technological capabilities lie in aircraft environmental control technology, fluid pollution technology, fluid pressure and flow control technology, fluid heat exchange and metal sheet welding technology, electronic equipment cooling technology, and high-mesh wire mesh weaving technology.¹¹⁷³

Xinhang was founded in 2004 from the merger of Factories 134, 116, 103, and 540 in the city of Xinxiang.¹¹⁷⁴ In 2014, it successfully acquired the German company HILITE, took over its global assets and business, and entered the leading R&D and manufacturing field of high-end engine and transmission system components. Xinhang has worked on all the Shenzhou spacecraft, as well as the Tiangong and Tianhe space station. It was also involved with the PLAN's aircraft carriers program.¹¹⁷⁵

Notable Applications:

- Parts produced by Xinhang are used in the C919, CRJ929 large passenger aircraft, MA series, Seagull 300, AG600, AC313A, CJ series engines, AES100\AEP500 engines, Boeing, Airbus, and other aircraft¹¹⁷⁶

Notable Collaborations:*Domestic:*

- COMAC, AVIC General Aircraft, XAC

International:

- UTAS, Parker, LIEBHERR, Honeywell, Hansen Aerospace (USA)¹¹⁷⁷
- Has produced parts for Boeing and Airbus aircraft¹¹⁷⁸

Key Personnel:

- Zhang Yaojun [张耀军]: Chairman¹¹⁷⁹

Equipment/Facilities:

- Shanghai R&D Center [上海研发中心]¹¹⁸⁰

10.12.16. AVIC YIBIN SANJIANG MACHINERY CO., LTD. [宜宾三江机械有限责任公司]**Aliases and Former Names:**

- Sanjiang [三江]

Notable Products/Services: fuel and pipeline technologies¹¹⁸¹

Immediate Parent Institution:

- AVIC Aerospace System Co., Ltd. [中航机载系统有限公司]¹¹⁸²

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹⁸³

Address: No. 72, Minjiang North Road, Cuiping District, Yibin, Sichuan Province [四川省宜宾市翠屏区岷江北路 72 号]¹¹⁸⁴

Website: www.sjix.cn

Key Data:

- Established: 1965¹¹⁸⁵
- Capital: 206.69 million RMB in registered capital¹¹⁸⁶
- Personnel: 780 employees¹¹⁸⁷

- Floor space: over 220,000 sqm¹¹⁸⁸

Overview:

Yibin Sanjiang Machinery (SJJX) specializes in fluid transfer control and precision manufacturing, valve system integration technology, ultra-high pressure sealing technology, cold extrusion technology, flexible pipeline connection technology, gas decompression technology, fuel ventilation, and booster/fuel delivery systems.

SJJX supplies advanced domestic pipeline connection technology and products. It manufactures power mechanisms for domestic aircraft ejection systems, accounting for more than 70% of the industry. It also accounts for over 80% of domestic aviation gas pressure reducers.¹¹⁸⁹

Key Personnel:

- Liu Jialiang [刘佳良]: Chairman; CEO¹¹⁹⁰

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹¹⁹¹

10.12.17. ZHENGZHOU AIRCRAFT EQUIPMENT CO., LTD [郑州飞机装备有限责任公司]

Aliases and Former Names:

- Factory 124 [124 厂]
- Zhengfei [郑飞]

Notable Products/Services: aviation weapons suspension and firing system devices, ground support training systems¹¹⁹²

Immediate Parent Institution: AVIC Electromechanical Systems Co. Ltd.

Corporate Ownership: AVIC Electromechanical Systems Co. Ltd. [中航工业机电系统股份有限公司] (100%)¹¹⁹³

Address: Middle section of South Third Ring Road, Erqi District, Zhengzhou, Henan Province [河南省郑州市二七区南三环中段]¹¹⁹⁴

Website: <http://zhengfei.avic.com>

Key Data:

- Established: 1960¹¹⁹⁵
- Capital: 644 million RMB in registered capital¹¹⁹⁶
- Personnel: 2,165 employees
- Floor space: over 666,667 sqm (over 1000 mu)¹¹⁹⁷

Overview:

The Zhengzhou Aircraft Equipment Co. specializes in development of aviation weapons suspension and firing system devices and ground support training systems, and is considered a key military unit in the national defense science and technology industry.¹¹⁹⁸

It has produced over 300 varieties of aviation equipment in 20 categories, which have been used in fighter, bomber, attack, and transport aircraft and helicopters, and contributed to China's hydrogen bomb airdrop test.¹¹⁹⁹ It also produces electric vehicles and is a leading enterprise in the development of grain processing equipment.¹²⁰⁰

Notable Applications:

- Made an unidentified contribution to China's hydrogen bomb airdrop test¹²⁰¹

Key Personnel:

- Li Yuping [李毓平]: Chairman
- Wang Haitao [王海涛]: CEO
- Qi Jianfei [齐剑飞]: Vice Chairman¹²⁰²

10.13. Guiyang Aviation Motor Co., Ltd. [(中航工业)贵阳航空电机有限公司]

Aliases and Former Names:

- State-owned 185th Factory [国营第一八五厂]
- AVIC Guiyang Aviation Electrical Machinery Co., Ltd. ¹²⁰³

Notable Products/Services: airborne equipment, including secondary power supply, power control and protection, power distribution devices and motors¹²⁰⁴

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership: AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (100%)¹²⁰⁵

Address: No. 8 Wujiang Road, Guiyang Economic Development Zone, Guiyang, Guizhou Province [贵州省贵阳市贵阳经济开发区乌江路 8 号]¹²⁰⁶

Website: <http://www.avicgaemc.com>

Key Data:

- Established: 1958 or 1962, current form in 2000¹²⁰⁷
- Capital: 190.27 million RMD in registered capital ¹²⁰⁸
- Personnel: 1,626 employees

- Floor space: 140,000 sqm, including a building area of 120,000 sqm¹²⁰⁹

Overview:

The Guiyang Aviation Motor Co. manufactures electrical machinery and electrical appliances for China's aviation industry. The company's military products are mainly airborne equipment such as secondary power supply, power control and protection, and power distribution devices and motors. The company's civilian products are mainly auto parts such as starters and generators. Other products include four major categories of aviation secondary power supply (power converter), power control protection and power distribution devices, electric motors, and aircraft anti-icing and temperature control devices.¹²¹⁰

This Company was the first aviation industry enterprise in Guizhou Province, established in either 1958 or 1962.¹²¹¹ The company is now a member of China Association of Automobile Manufacturers and a director unit of China Auto Parts Industry Association. It has an aviation product design institute and an automotive motor research institute. It is capable of advanced casting, machining, thermal surface treatment, physical and chemical analysis, environmental testing, instrument measurement, and process equipment design and manufacturing.¹²¹² In addition, it has a holding company, Guangzhou Airlines Die Casting Company, which is mainly engaged in aluminum alloy castings.

Notable Collaborations:

- Produces airborne electronic equipment for Comac's C919 aircraft.¹²¹³

Key Personnel:

- Wang Gen [王良]: Chairman
- Du Xu [杜旭]: CEO¹²¹⁴

Equipment/Facilities:

- Environmental test/calibration laboratory in Southwest China.¹²¹⁵

10.14. Hefei Jianghang Aircraft Equipment Co., Ltd. [合肥江航飞机装备股份有限公司]

Aliases and Former Names:

- AVIC Jianghang [中航工业江航]
- 江航装备

Notable Products/Services: aviation components, including fuel tank and oxygen system components, aerospace safety and environmental control products, military and civilian special refrigeration products¹²¹⁶

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership:

- AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (54.6908%)
- AVIC Aviation Industry Investment [中航航空产业投资有限公司] (18.8898%)
- Guoxin Capital Co., Ltd. [国新资本有限公司] (8.2184%)
- Ningbo Meishan Bonded Port Area Haolan Yingjian Investment Management Center (Limited Partnership) [宁波梅山保税港区浩蓝鹰击] (4.8179%)
- Jiangxi Military Industry Holding Group Co., Ltd. [江西省军工控股集团有限] (4.3799%)¹²¹⁷

Address: No. 35, Yan'an Road, Baohe Industrial Zone, Hefei, Anhui Province [安徽省合肥市包河工业区延安路 35 号]¹²¹⁸

Website: <https://www.jianghang.com/>

Archived: <https://web.archive.org/web/20220124043138/https://www.jianghang.com/>

Key Data:

- Established: 2007
- Capital: 404 million RMB in registered capital
- Personnel: over 1,300 employees¹²¹⁹

Overview:

Hefei Jianghang Aircraft Equipment (Jianghang) produces aviation components such as oxygen systems, airborne fuel tank protection systems, aircraft auxiliary fuel tanks, aviation oxygen ground equipment, and other aviation products, as well as aerospace life support and environmental control products and military and civilian special refrigeration products.

At present, it has developed 20 core technologies, including technologies related to airborne molecular sieve oxygen production, oxygen regulation, aviation oxygen supply and anti-load integration, temperature control oxygen supply regulation systems for extravehicular space suits, and military armored air conditioning environmental adaptability.¹²²⁰

The company was formed in 2007 by the reorganization and integration of Anhui Jianghuai Aviation Oxygen Supply Refrigeration Equipment Co., Ltd. (Factory 351) and Hefei Wan'an Aviation Equipment Co., Ltd. (Factory 164), enterprises which specialized in R&D and production of aviation oxygen supply and aircraft auxiliary fuel tanks. In 2019, the company was restructured and established as a joint stock limited company.¹²²¹

Known Subsidiaries:

- Jianghang Envi-tek [江航爱唯科]
- Swan Refrigeration [天鹅制冷]¹²²²

Key Personnel:

- Song Zuming [宋祖铭]: Chairman
- Wang Youqian [王永骞]: Board Secretary
- Zheng Changquan [邓长权]: CEO
- Liu Wenbiao [刘文彪]: Deputy CEO; Chief Engineer¹²²³

Equipment/Facilities:

- 10 departments
- 10 R&D units
- Five technology R&D units:
 - Oxygen Supply Technology Research Institute [供氧技术研究所]
 - Oxygen Source Technology Research Institute [氧源技术研究所]
 - Fuel Products Research Institute [燃油产品研究所]
 - Civil Aircraft Product Research Institute [民机产品研究所]
 - Testing center [试验中心]¹²²⁴

10.15. AVIC Jonhon Optronics Technology Co., Ltd. [中航光电科技股份有限公司]**Aliases and Former Names:**

- Factory 158 [158 厂]
- JONHON
- Factory 158 [158 厂] (former)
- Luoyang Aviation Electric Appliance Factory [洛阳航空电器厂] (former)
- Huachuan Electric Appliance Factory [华川电器厂] (former)

Notable Products/Services: optical, electrical, and liquid connection¹²²⁵

Immediate Parent Institution: AVIC Aerospace System Co., Ltd. (likely)¹²²⁶

Corporate Ownership:

- AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (37.68%)¹²²⁷
- Henan Investment Group Co., Ltd. [河南投资集团有限公司] (8.11%)¹²²⁸
- China Construction Bank Corporation - Yifangfda Defense Industry Hybrid Securities Investment Fund [中国建设银行股份有限公司-易方达国防军工混合型证券投资基金] (1.66%)¹²²⁹

- China Airborne Missile Academy [中国空空导弹研究院] (1.5%)¹²³⁰
- National Military-Civil Integration Industry Investment Fund Co. [国家军民融合产业投资基金有限责任公司] (0.74%)¹²³¹
- National Social Security Fund 102 Portfolio [全国社保基金一零二组合] (0.67%)¹²³²
- Saiwei Avionics Technology Co. [赛维航电科技有限公司] (0.66%)¹²³³
- Guoxin Investment Co., Ltd. [国新投资有限公司] (0.58%)¹²³⁴
- National Social Security Fund 106 Portfolio [全国社保基金一零六组合] (0.57%)¹²³⁵
- Agricultural Bank of China Co., Ltd.-Southern Military Industry Reform and Flexible Allocation Hybrid Securities Investment Fund [中国农业银行股份有限公司-南方军工改革灵活配置混合型证券投资基金] (0.57%)¹²³⁶

Address: No.10, Zhoushan Rd., Pilot Free Trade Zone, Luoyang, Henan Province [中国（河南）自由贸易试验区洛阳片区周山路 10 号]¹²³⁷

Website: <http://www.jonhon.cn>

Key Data:

- Established: 1970 (as Factory 158), 2002 (current version)
- Capital: 1.63101 billion RMB in registered capital¹²³⁸
- Personnel: over 10,000 employees¹²³⁹

Overview:

AVIC Jonhon Optronics Technology (Jonhon) specializes in R&D of optical, electrical, and liquid connection technologies and equipment, and has independently developed over 300 series and 250,000 varieties of products. Jonhon's products are widely used in defense, commercial aerospace, telecommunications, data centers, new energy vehicles, petroleum, electrical power, industrial equipment, rail transit, healthcare, and other high-end industries.¹²⁴⁰

Aviation products include electrical connectors, fiber/optical expansion connectors, high-speed data connectors, umbilical connectors, micro-rectangular connectors, EMI connectors, cable assemblies, data bus cables, fiberoptic cable assemblies, fluid connectors and pipes, multi-function display consoles, and integrated installation and interconnection products. Aerospace products include electrical connectors, fiber/optical expansion connectors, high-speed data connectors, umbilical connectors, micro-rectangular connectors, wide temperature connectors, cable assemblies, data bus cables, fiber optic cable assemblies, high-speed backplane, VPX integrated chassis, and optical transceivers.¹²⁴¹

AVIC Jonhon Optronics Technology Co. was founded in 1970 as Huachuan Appliance Factory [华川电器厂], or Factory 158 [158 厂]. The factory produced electrical plugs for aviation. In 1991, it was renamed to Luoyang Aviation Electric Appliance Factory [洛阳航空电器厂]. In 2002, the company was reorganized as a joint-stock company primarily sponsored by AVIC I, becoming AVIC Jonhon Optronics Technology Company. It was listed on the Shenzhen Stock Exchange in 2007.¹²⁴²

Known Subsidiaries:

- AVIC Forstar Co., Ltd. [中航富士达科技股份有限公司]
- Shenyang Xinghua Aero-electric Appliance Co., Ltd. [沈阳兴华航空电器有限责任公司]
- Shenzhen Xiangtong Photoelectric Technology Co., Ltd. [深圳市翔通光电技术有限公司]
- Jonhon has subsidiaries and branches in Shenyang, Qingdao, Xi'an, Shenzhen, Taixing, Guangzhou, Dongguan and Hefei¹²⁴³

Key Personnel:

- Li Sen [李森]: CEO
- Guo Zeyi [郭泽义]: Chairman of the board
- Wang Yage [王亚歌]: Secretary of the Board¹²⁴⁴

Equipment/Facilities:

- National Enterprise Technology Center
- Postdoctoral Research Base
- CNAS certificated laboratory¹²⁴⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Office of Foreign Asset Control Sanctions List¹²⁴⁶
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹²⁴⁷

10.15.1. AVIC FORSTAR CO., LTD. [中航富士达科技股份有限公司]**Aliases and Former Names:**

- AVIC Forstar [中航富士达]

Notable Products/Services: radio frequency coaxial connectors

Immediate Parent Institution: AVIC Jonhon Optronic Technology Co., Ltd.¹²⁴⁸

Corporate Ownership:

- AVIC Jonhon Optronic Technology Co., Ltd. [中航光电科技股份有限公司] (46.64%)¹²⁴⁹
- AVIC [中国航空工业集团公司] (11.10%)¹²⁵⁰

Address:

- 200 meters west of the intersection of Shanglinyuan 4th Road and Dingkunchi 2nd Road, High-tech Zone, Xi'an, Shaanxi Province [陕西省西安市高新区上林苑四路与定昆池二路十字向西 200 米]¹²⁵¹
- No. 71, Jinye Road, High-tech Zone, Xi'an, Shaanxi Province [陕西省西安市高新区锦业路 71 号]¹²⁵²

Website: <http://www.forstar.com.cn>

Key Data:

- Established: 1998¹²⁵³
- Capital: 187.728 million RMB in registered capital¹²⁵⁴
- Personnel: over 1000 employees¹²⁵⁵

Overview:

AVIC Forstar specializes primarily in RF coaxial connectors. Its products are widely used in aerospace, defense industry, communications and other fields, and exported to Southeast Asia, Europe, and the United States. It ranks first in the domestic RF connector industry.¹²⁵⁶ It became part of AVIC in 2013.¹²⁵⁷

Equipment/Facilities:

- Offices in Beijing, Shanghai, Jiaxing, Shenzhen, Nanjing, Chengdu, Chongqing, Mianyang, Xiaogan, Hefei, Suzhou, Shijiazhuang, and Xi'an¹²⁵⁸

Key Personnel:

- Guo Jianxiong [郭建雄]: Founder¹²⁵⁹
- Liu Yang [刘阳]: Chairman
- Fu Jingchao [付景超]: CEO
- Wu Xiangwen [武向文]: Deputy Chairman¹²⁶⁰

10.15.2. SHENYANG XINGHUA AERO-ELECTRIC APPLIANCE CO., LTD. [沈阳兴华航空电器有限责任公司]**Aliases and Former Names:**

- State-owned 117 Factory [国营 117 厂]
- Shenyang Xinghua [沈阳兴华]
- AVIC Xinghua [航空工业兴华]

Notable Products/Services: electrical/optical connector and cable products, motor fans, aviation plug sockets, automatic protection switches¹²⁶¹

Immediate Parent Institution: AVIC Jonhon Optronic Technology Co., Ltd¹²⁶²

Corporate Ownership:

- AVIC Jonhon Optronic Technology Co., Ltd. [中航光电科技股份有限公司] (62.87%)¹²⁶³
- AVIC [中国航空工业集团公司] (37.13)¹²⁶⁴

Address: No. 30, Kaifa Road, Shenyang Economic and Technological Development Zone, Shenyang, Liaoning Province [辽宁省沈阳市沈阳经济技术开发区开发大路 30 号]¹²⁶⁵

Website: <http://avic-xinghua.com>

Key Data:

- Established: 1957¹²⁶⁶
- Capital: 80.8564 million RMB in registered capital¹²⁶⁷
- Items produced: annual output of over 200 series and over 300,000 varieties of products, including 4 million optical and electrical connector products, aero engine wiring harness, aircraft wiring harnesses, photoelectric communication transmission buses and three other categories of over 20 cable harness products¹²⁶⁸
- Personnel: over 2,000 employees¹²⁶⁹
- Floor space: factory area of 100,000 sqm; building area of 90,000 sqm¹²⁷⁰

Overview:

Shenyang Xinghua Aero-Electric Appliance specializes in producing electrical appliances in the defense field including electrical (optical) connectors, cable harnesses (optical fiber buses), motor fans, and integrated systems and equipment. Its products are widely used in aviation, aerospace, weaponry, ships, electronics, the nuclear industry, transportation industry, communications industry, intelligent manufacturing, and other industrial fields. The company has won many awards from the Central Military Commission and provincial defense departments.¹²⁷¹

The company's products been used in the Shenzhou-5 spacecraft. It claims to be the only PRC company which has mastered US and Russian military standards. In 2008, the company developed and produced a life switch spacesuit system for PRC taikonauts.¹²⁷²

Xinghua was established on September 4, 1957 as the State-owned 117th Factory. It was one of the 156 key projects constructed during the First Five-Year Plan, and is China's first avionics connector production unit.

Notable Applications:

Involved in a wide range of PRC programs, including:

- China's first P-type electrical connectors
- Manufacture of various new combat aircraft

- Early nuclear and space programs
- Long-distance rocket launch systems
- PL-series missiles
- Shenzhou-5 space mission
- Life switch system for taikonaut spacesuits.¹²⁷³
- Connectors: LT series fluid connectors, optical fiber connectors, JY27 I series connectors, J599-III series connectors, QHT01E series connectors, NGY series connectors, EVH series connectors, 5015 Series Connectors, Board-to-Board Connectors.¹²⁷⁴
- Electrical Appliances: WF-D05 turbine generator, DG-201 permanent magnet brushless DC motor, JZZ-6 self-aligning machine and AC/DC axial flow fan, ZKC series, ZKP series and KAF-1 emergency switches, etc.
- Cable Harnesses: turbofan series engine cables, turboshaft series engine cables, DQ23 series low voltage cables, BZL series bus cables, TXY series communication lead cables, PJ series ground power cables, 1553B data bus, etc.¹²⁷⁵

Key Personnel:

- Li Wei [李伟]: Chairman
- Sun Jinjin [孙近近]: CEO¹²⁷⁶

Equipment/Facilities:

- Seven R&D centers in: Harbin, Shenyang, Beijing, Shanghai, Qingdao, other places¹²⁷⁷
- A Chengdu branch for the wiring harness integration business and UAV business
- A large aircraft comprehensive support center in Xi'an¹²⁷⁸
- Nationally recognized testing laboratory
- Secondary screening center for aerospace key model electrical connectors
- Provincial-level technology center in Liaoning Province.¹²⁷⁹

10.16. AVIC Leihua Electronic Technology Research Institute [航空工业雷华电子技术研究所]

Aliases and Former Names:

- 607 Institute [607 所]
- (AVIC) Radar Institute [(航空工业)雷达所]
- AVIC Airborne Radar Institute [中航机载雷达所]
- AVIC Radar and Electronic Equipment Research Institute [中航雷达与电子设备研究院]
- (AVIC) Lightning Academy [(中航工业)雷电院]

Notable Products/Services: military and civil radar and avionics technology¹²⁸⁰

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.¹²⁸¹

Address: No. 796, Liangxi Road, Binhu District, Wuxi, Jiangsu Province [江苏省无锡市滨湖区梁溪路 796 号]¹²⁸²

Website: <http://chinaleihua.com/>

Archived: <https://web.archive.org/web/20210224182132/http://chinaleihua.com/>

Key Data:

- Established: 1970¹²⁸³
- Personnel: nearly 2,000 employees¹²⁸⁴

Overview:

The Leihua Electronic Technology Research Institute (LETRI) is a research institute focused on airborne radar and avionics technology.¹²⁸⁵ It continues to be a leading developer of airborne radar systems for the Chinese military as well as civilian end-users today.¹²⁸⁶ LETRI's military products include airborne fire control radars, search and surveillance radars, synthetic aperture radars, weather detection and navigation radars, early warning radars, missile-borne radars, and other major product types.

The Institute's civilian product field develops and produces special test equipment, high-tech cable products such as television equipment, microwave devices, various ground and sea radars, and Internet of Things electronic equipment.¹²⁸⁷

The 607 Institute, long-known as the AVIC Airborne Radar Institute [中航机载雷达所] before its rebranding as AVIC Leihua, was first established in Zhuzhou in Hunan Province. It was subsequently moved to Neijiang, Sichuan [四川内江] as part of the Third Front relocations, and later transferred to Wuxi in coastal Jiangsu province in the 1980s. The Institute is headquartered in Wuxi, with a research and development center and a production test base.

Notable Applications:

- Type 204 (a.k.a. SL-4), described as the world's first airborne air-cooled 2-D AESA fire control radar [机载风冷二维有源相控阵火控雷达]
- Monopulse JL-7, described as China's first successful airborne fire control radar¹²⁸⁸
- C919 Aircraft integrated surveillance system, which can provide real-time information about surrounding flight environment during take-off, cruise, approach, and landing¹²⁸⁹
- Full waveform mechanical pulse JL-10A PD Radar, one of the first airborne PD radars to enter Chinese service, although the type was not considered entirely successful and was relegated to the JH-7A fighter/bombers used by PLAN naval aviation units¹²⁹⁰
- In 2018, displayed an X-band AESA radar at the Zhuhai Airshow;¹²⁹¹ this radar is capable of detecting fighters 170 km away and can track 15 targets at the same time¹²⁹²

Notable Collaborations:

- The 780 Factory [780 厂] worked in partnership with the 607 Institute. It was eventually transformed into the Sichuan Changhong Electric Co. [长虹电子], a large conglomerate that includes many military enterprises.¹²⁹³
- Worked with COMAC closely during the development of the C919 aircraft¹²⁹⁴

Key Personnel:

- Cheng Yufeng [程宇峰]: Director; Party Secretary¹²⁹⁵
- Xu Sunhui [徐隼慧]: Deputy Head of Human Resources [人力资源部副部长]¹²⁹⁶
- Yu Chaopeng [于超鹏]: Assistant to the Director [所长助理]¹²⁹⁷
- Qian Jun [钱君]: Project Leader [项目负责人]¹²⁹⁸

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹²⁹⁹
- Present on U.S. Department of Commerce Military End-User List¹³⁰⁰
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹³⁰¹

10.17. AVIC Luoyang Optoelectronic Technology Company Ltd [中航洛阳光电技术有限公司]

Notable Products/Services: airborne avionics systems, optical, electronic, mechanical, optoelectronic, optoelectronic products¹³⁰²

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership: AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (100%)¹³⁰³

Address: No. 613, Tijiazhuang Street, Yibin District, Luoyang, Henan Province [河南省洛阳市伊滨区提驾庄街 613 号]¹³⁰⁴

Key Data:

- Established: 26 April 2011¹³⁰⁵
- Capital: 5 million RMB in registered capital¹³⁰⁶

Overview:

AVIC Luoyang Optoelectronic Technology conducts production, sales, and service support for airborne avionics systems and equipment supporting various types of aircraft. The company is responsible for providing supporting products and services for aerospace, weaponry, ships, electronic information, and other defense fields. These could include optical, electronic, mechanical, optoelectronic, optoelectronic products, computer network and systems products,

closed-circuit television engineering, audio engineering and communication engineering, CNC equipment, LED display screens, intelligent electrical automation engineering, office automation engineering, metal materials and products, mineral products (excluding state-controlled products), chemical products (excluding dangerous chemicals), new environmental protection and energy-saving materials, as well as providing technical services and technology transfer services.¹³⁰⁷

Known Subsidiaries:

- Avionics Zhonghe Shandong Medical Technology Co., Ltd. [航电中和山东医疗技术有限公司]
- Luoyang Longsheng Technology Co., Ltd. [洛阳隆盛科技有限责任公司]
- Avionics Zhonghe Shandong Medical Technology Co., Ltd. [航电中和山东医疗技术有限公司]¹³⁰⁸

10.18. Shaanxi Baocheng Aviation Instrument Co., Ltd. [陕西宝成航空仪表有限责任公司]

Aliases and Former Names:

- State-owned 212th Factory [国营第二一二厂]

Notable Products/Services: components for aerospace, weaponry, ships, and other industries, including gyroscopes, navigation systems, inertial components, sensors, precision potentiometers¹³⁰⁹

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Corporate Ownership: AVIC Aerospace System Co., Ltd. [中航机载系统有限公司] (100%)¹³¹⁰

Address: No. 70, Qingjiang Road, Baoji, Shaanxi Province [陕西省宝鸡市清姜路 70 号]¹³¹¹

Website: <http://baocheng.avic.com/gxwz/index.shtml>

Key Data:

- Established: 1955¹³¹²
- Capital: 450 million RMB in registered capital
- Assets: over 2 billion RMB in total assets
- Personnel: over 2,800 employees
- Floor space: nearly 600,000 sqm; production and research space of 150,000 sqm¹³¹³

Overview:

The Shaanxi Baocheng Aviation Instrument Co. is a military-civil fusion enterprise focused on airborne equipment. The company is mainly engaged in the development and production of aviation gyroscopes, navigation systems, in-flight entertainment systems, inertial components, sensors, precision potentiometers and other products, covering aviation, aerospace, weapons, ships, and other industries.¹³¹⁴

Key Personnel:

- Liu Zhiyong [刘智勇]: Chairman¹³¹⁵
- Li Hongyin [李宏印]: CEO¹³¹⁶

10.19. Shanghai Aero Measurement Controlling Research Institute [上海航空测控技术研究所]

Aliases and Former Names:

- 633 Institute [633 所]
- AVIC Shanghai Aero Measurement Controlling Research Institute [航空工业上海航空测控技术研究所]
- AVIC Measurement Control Institute [航空工业测控所]

Notable Products/Services: aviation fault diagnosis, prediction, and aircraft health management technology, testing and support equipment, data acquisition and processing technology, sensor technology, testability and verification technology, health management technology, maintainability technology

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.¹³¹⁷

Address: No. 188, Sanxiang Road, Sijing Town, Songjiang District, Shanghai [上海市松江区泗泾镇三祥路 188 号]¹³¹⁸

Website: <https://samri.com.cn/>

Key Data:

- Established: 1962¹³¹⁹

Overview:

The Shanghai Aero Measurement Controlling Research Institute (SAMRI) [上海航空测控技术研究所] is primarily focused on developing applications in the fields of fault diagnosis and prediction technology, data acquisition and processing technology, sensor technology, testability

and verification technology, health management technology, and research and application of maintainability technology. These applications are then utilized in both aerospace and other industrial applications.¹³²⁰

Notable Applications:

- Shanghai No. 2 industrial robot
- CT-M9 cameras
- Qinshan nuclear power plant nuclear fuel transportation real-time vibration monitor
- Shanghai Zhujiamen coal terminal computer management and monitoring system
- Shanghai Radio and Television Bureau bridge computer real-time control system¹³²¹

Notable Collaborations:

Domestic:

- Cooperates with the Civil Aircraft Maintenance Engineering Research Center [民用飞机维修工程研究中心] of COMAC's Shanghai Customer Service Co., Ltd [中国商飞上海客户服务有限公司]
- Supporting unit for the China Equipment Management Association Equipment Fault Diagnosis Technology Development Center [中国设备管理协会设备故障诊断技术开发中心]¹³²²
- As a subsidiary of the AVIC Airborne System Co., Ltd. [中航机载系统有限公司], the Institute frequently collaborates with this company, and is subjected to inspections and visits by the parent company's leadership¹³²³
- In September of 2021, signed an investment intention agreement with AVIC¹³²⁴

Key Personnel:

- Li Feng [李锋]: Director¹³²⁵
- Wu Yingjian [吴英建]: Chief Engineer¹³²⁶
- Hao Zhaoping [郝照平]: Deputy CEO¹³²⁷

Equipment/Facilities:

- The Institute employs equipment such as:
 - Vibration measuring instruments
 - Shock pulse meters and other equipment fault diagnosis instruments
 - Laser goniometer
 - Laser two-dimensional wind tunnel flow field analysis system
 - Multi-channel high-speed dynamic signal
 - Data acquisition system
 - 6210FFT analyzer
 - Aero-engine vibration monitoring and analysis system.¹³²⁸

10.20. Sichuan Lingfeng Asset Management Co., Ltd. [四川凌峰资产经营管理有限公司]

Notable Products/Services: business services, mechanical and electrical products, hydraulic and pneumatic power machinery and components, rubber and plastic parts

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Address: No. 1, Guangdong Road East Section 2, Guanghan City, Deyang City, Sichuan Province [四川省德阳市广汉市广东路东二段 1 号]¹³²⁹

Key Data:

- Established: 2010
- Capital: 1 million RMB in registered capital¹³³⁰

Overview:

Sichuan Lingfeng Asset Management, founded in 2010, has a business scope including business management services, sales, mechanical and electrical products, hydraulic and pneumatic power machinery and components, rubber parts, and plastic parts production.¹³³¹

10.21. Xi'an Qing'an Industrial Development Co., Ltd. [西安庆安产业发展有限公司]

Notable Products/Services: mechanical, electrical, hydraulic, and industrial automation equipment, communications equipment, aviation electrical appliances

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Address: No. 628, Daqing Road, Lianhu District, Xi'an, Shaanxi Province [陕西省西安市莲湖区大庆路 628 号院内]¹³³²

Overview:

Xi'an Qing'an Industrial Development Co., Ltd. produces various types of mechanical, electrical, hydraulic, and industrial automation equipment, communications equipment, aviation electrical appliances, auto parts, mechanical and electronic products, work clamp molds and accessories, control and testing equipment, computer software, and other machinery.¹³³³

10.22. Zhengzhou Zhengfei Investment Holding Co., Ltd. [郑州郑飞投资控股有限公司]

Notable Products/Services: technology for aviation airborne equipment, electrical and electronic products, metal and non-metal materials

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.

Address:

Middle section of the South Third Ring Road, Erqi District, Zhengzhou, Henan Province [河南省郑州市二七区南三环中段]

Key Data:

- Established: 19 December 2007
- Capital: 150 million RMB in registered capital¹³³⁴

Overview:

Zhengzhou Zhengfei Investment Holding Co. produces technology for aviation airborne equipment, electrical and electronic products, mechanical and electrical equipment, metal and non-metal materials, industrial investment, and logistics equipment. Other services include import and export of goods and technologies, investment management, business management consulting, hotel management, and house leasing.¹³³⁵

10.23. AVIC Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司]

Aliases and Former Names:

- AVIC Electrical Measurement [中航电测]
- Zhongyuan Electric Measuring Instrument Factory [中原电测仪器厂] (former)¹³³⁶
- Zhongyuan Gemstone Factory [中原宝石厂] (former code name)
- 521 Factory [521 厂] (former)¹³³⁷

Notable Products/Services: military and civilian measurement and control products, aircraft and helicopter components, sensing and control products, intelligent infrastructure, industrial software

Immediate Parent Institution: AVIC Aerospace System Co., Ltd.¹³³⁸

Corporate Ownership:

- Hanzhong Hanhang Electromechanical Co., Ltd. [汉中汉航机电有限公司] (26%)

- Hanzhong Aviation Industry (Group) Co., Ltd. [汉中航空工业（集团）有限责任公司] (23.94%)
- AviChina Industry and Technology Co., Ltd.[中国航空科技工业股份有限公司] (1.19%)
- AVIC [中国航空工业集团公司] (0.62%)
- Several smaller entities owning less than a percent each.¹³³⁹

Address: No. 166 Xibu Avenue, High-tech Industrial Development Zone, Xi'an, Shaanxi Province [陕西省西安市高新技术产业开发区西部大道 166 号]¹³⁴⁰

Website: <http://www.zemic.com.cn/>

Key Data:

- Established: 1965¹³⁴¹
- Assets: 950 million RMB in total assets (2012)
- Capital: 120 million RMB in registered capital (2012)
- Personnel: over 2,000 employees (2012)¹³⁴²
- Floor space: Hanzhong location covers 63,000 sqm¹³⁴³

Overview:

The AVIC Zhonghang Electronic Measuring Instruments Co. (ZEMIC) develops military and civilian measurement and control products and is a major global supplier of electronic measurement products.^{1344 1345} Its business covers four sectors: military aviation products, sensing and control products, intelligent infrastructure, and industrial software.¹³⁴⁶

Products include helicopter pilot stick systems, helicopter hoist/winch systems, helicopter auxiliary products, aircraft power distribution systems, large and medium-sized aircraft accessories, aircraft weighing and inspection systems, resistance strain gauges, precision resistors, weighing instruments and software, aviation airborne and ground-based test systems, motor vehicle performance and environmental protection testing systems, intelligent training systems for motor vehicle drivers, remote network supervision network platforms, vehicle weighing control systems, industrial automation systems, precision electromechanical control products, and internet of things applications.¹³⁴⁷

ZEMIC was established in 1965 as a Third Line factory previously associated with the Taiyuan Aviation Instruments Factory [太原航空仪表厂]¹³⁴⁸ and restructured into its current corporate form in 2002.¹³⁴⁹ ZEMIC appears to be under AVIC Aerospace System [中航机载系统有限公司],¹³⁵⁰ though it is majority-owned by CAIGA through two Hanzhong organizations.¹³⁵¹ ZEMIC developed the PRC's first domestic resistance strain gauge production line in 1974. In 1977, it produced the PRC's first strain gauge pressure sensor.¹³⁵² It now has the leading and largest production line of resistance strain gauges and transducers in China.¹³⁵³

Notably, it has both US and European branches, although it is unclear what the status of ZEMIC's US business is following its addition to the USG Entity List in September 2021.¹³⁵⁴

Notable Applications:

- Possibly: J-20 stealth fighter components (there is a photo of it on ZEMIC's website, though it is unclear what ZEMIC's role is in the J-20, if any)¹³⁵⁵
- Early missions included developing parts for the Dong Fang Hong 1 satellite¹³⁵⁶

Notable Collaborations:

Domestic:

- 2021 cooperation with Chang'an University [长安大学]¹³⁵⁷
- 2012 strategic cooperation agreement with Yonyou Software Co. Ltd. [用友软件股份有限公司] (now known as Yonyou Network Technology Co.)¹³⁵⁸

International:

- ZEMIC has US and Europe branches (see websites at <https://www.zemiceurope.com/> and <http://www.zemicusa.com/>); it is unclear what the status of ZEMIC's US business is, as it was added to the USG Entity List in September 2021.¹³⁵⁹
- 2001 agreement with US company SI Technology [SI 科技] to produce high-precision sensors¹³⁶⁰
- The company's products have been gradually exported to dozens of countries and regions in Europe, America, Oceania, Asia and Africa.¹³⁶¹

Known Subsidiaries:

- ZEMIC Huayan [中航电测华燕]
- ZEMIC Huihua [中航电测耀华]
- Marketing Branch [营销分公司]
- Hanzhong Branch [汉中分公司] (location of Hanzhong S&T Production Base¹³⁶²)¹³⁶³
- Military Products Branch [军品分公]
- ZEMIC Xi'an [中航电测西安]
- Hanzhong 101 Aviation Electronic Equipment Co. Ltd. [汉中一零一航空电子设备有限公司]¹³⁶⁴

Key Personnel:

- Li Junfeng [李俊峰]: Deputy CEO¹³⁶⁵
- Chen Nan [陈南]: Chief Technology Expert [首席技术专家]¹³⁶⁶

Inclusion on U.S. Entity Lists:

- Present on U.S. Office of Foreign Asset Control Sanctions List¹³⁶⁷

10.23.1. HANZHONG 101 AVIATION ELECTRONIC EQUIPMENT CO. LTD. [汉中一零一航空电子设备有限公司]

Aliases and Former Names:

- State-owned 101st Factory [国营第 101 厂]
- Hanzhong Yilingyi [汉中一零一]
- State-owned Xingguang Electronic Instrument Factory [国营星光电子仪表厂] (former)¹³⁶⁸

Notable Products/Services: aviation test equipment, electronic products for aviation, aerospace, weaponry, ships¹³⁶⁹

Immediate Parent Institution: AVIC Zhonghang Electronic Measuring Instruments Co. Ltd.¹³⁷⁰

Corporate Ownership: AVIC Zhonghang Electronic Measuring Instruments Co. Ltd. [中航电测仪器股份有限公司] (100%)¹³⁷¹

Address:

- No. 18, Yingbin Road, Dahekan Town, Nanzheng District, Hanzhong, Shaanxi Province [陕西省汉中市南郑区大河坎镇迎宾路十八号]¹³⁷²
- South District, Economic and Technological Development Zone, Hanzhong, Shaanxi Province [陕西省汉中市经济技术开发区南区]¹³⁷³

Key Data:

- Established: 1965¹³⁷⁴
- Capital: 8 million RMB in registered capital¹³⁷⁵
- Personnel: over 100 R&D staff; over 20 security team members¹³⁷⁶

Overview:

The Hanzhong 101 Avionics Equipment Co. formerly known as the State-owned Xingguang Electronic Instrument Factory (State-owned No. 101 Factory) oversees research, production, sales, maintenance, and technical services for electronic products, sensors, machinery manufacturing, and software. Products encompass the aviation, aerospace, weaponry, and maritime fields. This includes aviation test equipment, aviation product maintenance and modification, rubber products, machinery, equipment rental services, intelligent power distribution technology, sensors and electronic software platforms, and solid state power controllers.¹³⁷⁷

The company was founded in 1965 and became privatized in 2005. In 2014, it implemented asset reorganization with AVIC/Zhonghang Electrical Measurement Instrument Co., Ltd. (ZEMIC), and is now affiliated to AVIC Airborne System Co., Ltd. The company's operations and R&D centers are located in the High-tech Industrial Development Zone of Xi'an, and the manufacturing center is located in Nanzheng District, Hanzhong.

AVIATION RESEARCH AND TESTING

While AVIC oversees many research institutions, most of these fall under its large subsidiaries specializing in military and civil flight vehicles, aero weaponry, and aviation components. However, three of these research institutions are notable for being directly subordinate to AVIC headquarters and researching key technologies which are then applied across AVIC's spectrum of products. This includes research and testing of new materials, aviation manufacturing technology, aviation structural strength and airworthiness, aerodynamics, metrology, flight mechanics, flight control, and many other necessities.

11. China Aviation Manufacturing Technology Institute [中国航空制造技术研究院]

Aliases and Former Names:

- 625 Institute [625 所]
- Manufacturing Institute [制造所]
- Beijing Manufacturing Technology Research Institute (BAMTRI) [北京航空制造工程研究所] (former)

Notable Products/Services: processing technologies and equipment for aircraft, aero-engines, and aircraft factories, technical support for aerospace, electronics, ship, and other industries; research on new materials, manufacturing technology, and process equipment¹³⁷⁸

Immediate Parent Institution: AVIC¹³⁷⁹

Address: No.1 Chaoyang Rd, Chaoyang District, Beijing [北京市朝阳区朝阳路 1 号院]¹³⁸⁰

Website: <http://www.avicmti.avic.com/>

Archived: <https://web.archive.org/web/20220124044747/http://www.avicmti.avic.com/>

Key Data:

- Established: 1957 (original),¹³⁸¹ 2016 (current form)¹³⁸²
- Personnel: 5,800 employees¹³⁸³
- Floor space: 973,000 sqm of research, testing, manufacturing, and training spaces¹³⁸⁴

Overview:

The China Aviation Manufacturing Technology Institute (AVIC MTI) undertakes basic, applied, and engineering research work on new materials, manufacturing technology, and process equipment. MTI provides processing technologies and equipment for China's development of new aircraft, aero-engines, and missiles, as well as upgrading of aircraft factories.¹³⁸⁵ MTI also provides technical support for aerospace, electronics, ships, and other industries. Besides the main MTI

headquarters in Beijing, it operates two subsidiary research institutes and two subsidiary companies.¹³⁸⁶

The modern iteration of AVIC MTI was founded in 2016 from the former AVIC Beijing Aeronautical Manufacturing Technology Research Institute (BAMTRI).^{1387 1388} Although the current form of the institute was founded in 2016,¹³⁸⁹ it actually originated in 1957.

Notable Collaborations:

- Co-authored a study, sponsored in part by the U.S. Department of Energy (DOE), on a titanium alloy with individuals affiliated with DOE's Argonne National Laboratory, PLA Air Force Engineering University's Science and Technology on Plasma Dynamics Lab, Beijing Institute of Technology, and the University of Science and Technology Beijing (USTB) State Key Lab for Advanced Metals and Materials (SKLAMM)¹³⁹⁰
- Multiple articles co-authored with U.S. auto manufacturer Ford¹³⁹¹
- Collaborations with German researchers which also included co-authors affiliated with the China Academy of Engineering Physics (CAEP) and Beihang University.¹³⁹²

Known Subsidiaries:

- Research Institute for Special Structures of Aeronautical Composites [济南特种结构研究所]¹³⁹³
- AVIC Beijing Precision Engineering Institute for Aircraft Industry (BPEI) [中航工业北京精密机械研究所]/[精密所] a.k.a. AVIC 303 Institute [303所]¹³⁹⁴
- AVIC Aviation High-Technology Co., Ltd. [中航航空高科技股份有限公司]¹³⁹⁵
 - AVIC Composite Corporation, Ltd. (ACC) [中航复合材料有限责任公司]¹³⁹⁶

Key Personnel:

- Li Zhiqiang [李志强]: Director [院长]; Deputy Party Secretary
- Zhang Yaping [张亚平]: Deputy Director; Party Secretary
- Zhou Xunwen [周训文]: Deputy Director
- Zeng Yuansong [曾元松]: Deputy Director
- Li Xiaohong [李晓红]: Deputy Director
- Jiang Bo [姜波]: Deputy Director
- Xiao Shihong [肖世宏]: Deputy Director
- Wang Jian [王健]: Chief Accountant
- Gu Yuanliang [顾元亮]: Deputy Party Secretary; Discipline Inspection Commission Secretary¹³⁹⁷
- Guan Qiao [关桥]: Chinese Academy of Engineering Academician
 - Internationally renowned welding technology expert, considered an academic leader in the field of aerospace welding engineering and pioneer of multiple special welding technologies¹³⁹⁸
- Other important experts include: Gong Shuili [巩水利], Liu Xiaochun [刘晓春], Yang Hui [杨辉], Li Dongfang [李栋芳], Yin Min [殷旻], Jin Jinghua [金京华], Cui Yu [崔郁]¹³⁹⁹

Equipment/Facilities:

- Contains key laboratories for:
 - welding and joining technology
 - digital manufacturing technology
 - plastic forming technology
 - additive manufacturing
 - precision manufacturing technology
 - high-performance electromagnetic windows¹⁴⁰⁰
- Also has various centers, such as:
 - manufacturing technology center
 - process equipment R&D center
 - laser technology center
 - intelligent manufacturing innovation center
 - other industry technology centers¹⁴⁰¹
- National Key Laboratory of High Energy Beam Processing Technology [高能束流加工技术国家级重点实验室]
 - a.k.a. Defense S&T Key Laboratory of High Energy Beam Processing Technology [高能束流加工技术国防科技重点实验室]
 - Conducts research into laser, electron beam, ion beam and plasma processing technologies and key equipment technologies for new materials and structures, for use in fields such as aviation, aerospace, electronics, armaments and other defense industries and civil industries¹⁴⁰²
- Beijing Key Laboratory of CNC Machining Technology and Equipment for Complex Components [复杂构件数控加工工艺及装备北京市重点实验室]
- Beijing Key Laboratory of High Energy Beam Incremental Manufacturing Technology and Equipment [高能束流增量制造技术与装备北京市重点实验室]
- Beijing Key Laboratory of Digital Plastic Forming Technology and Equipment [数字化塑性成形技术及装备北京市重点实验室]¹⁴⁰³
- Special Welding Innovation Center (national level) [特种焊接创新中心]
- Beijing Friction Welding Technology and Equipment Engineering Technology Research Center [北京市摩擦焊接工艺与装备工程技术研究中心]¹⁴⁰⁴
- International Joint Research Center for Basic Research of Advanced Aviation Manufacturing Technology [先进航空制造技术基础研究国际联合研究中心]
- Beijing International Science and Technology Cooperation Base for Advanced Manufacturing Technology and High-end Process Equipment [先进制造技术与高端工艺装备北京市国际科技合作基地]¹⁴⁰⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁴⁰⁶

11.1. AVIC Aviation High-Technology Co., Ltd. [中航航空高科技股份有限公司]

Aliases and Former Names:

- AVIC Hi-Tech [中航高科]
- Nantong Machine Tool Factory [南通机床厂] (former iteration)

Notable Products/Services: new aviation materials, high-end intelligent equipment¹⁴⁰⁷

Immediate Parent Institution: China Aviation Manufacturing Technology Institute¹⁴⁰⁸

Corporate Ownership:

- AVIC [中国航空工业集团公司] (41.86%)¹⁴⁰⁹
- China Aviation Manufacturing Technology Institute [中国航空制造技术研究院] (3.35%)
- Beijing Institute of Aeronautical Materials [中国航发北京航空材料研究院] (4.32%)
- Nantong Industry Holding Group Co., Ltd. [南通產業控股集團有限公司] (2.66%)¹⁴¹⁰

Address: No. 1 Yonghe Road, Chongchuan District, Nantong City, Jiangsu Province [江苏省南通市崇川区永和路 1 号]¹⁴¹¹

Website: <https://www.avicht.cn/>

Overview:

The AVIC Aviation Hi-Tech Co. (AVICHT) is mainly engaged in R&D and production of new aviation materials and high-end intelligent equipment. The company and its five subsidiaries cover new aviation materials, high-end intelligent equipment, rail transit, automobiles, medical equipment, equipment manufacturing, and venture capital.¹⁴¹²

The predecessor of the company originated from the Nantong Machine Tool Factory established in 1956, which was listed on the Shanghai Stock Exchange in May 1994. In 2015, the company carried out a major asset reorganization.

Known Subsidiaries:

- AVIC Composite Co., Ltd. [中航复合材料有限责任公司]¹⁴¹³
 - AVIC Composite was formed in 2010 as a joint venture between the 621 Institute and 625 Institute. The 621 Institute oversees the Defense S&T Key Laboratory of Advanced Composite Materials [先进复合材料国防科技重点实验室] and Structural Carbon Fiber Composites National Engineering Laboratory [结构性碳纤维复合材料国家工程实验室].¹⁴¹⁴ However, the 621 Institute has since been transferred out of AVIC to the Aero-Engine Corporation of China (AECC), taking these labs with it.
- Beijing Youcai Bermuda Aviation Equipment Co., Ltd. [北京优材百慕航空器材有限公司]

- Beijing Youcai Jinghang Biotechnology Co., Ltd. [北京优材京航生物科技有限公司]
- Nantong Hangzhi Equipment Technology Co., Ltd. [南通航智装备科技有限公司]
- Nantong Wantong Aviation New Material Development Co., Ltd. [南通万通航空新材料发展有限公司]¹⁴¹⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Office of Foreign Asset Control Sanctions List¹⁴¹⁶
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁴¹⁷

11.2. Beijing Precision Engineering Institute for Aircraft Industry [北京航空精密机械技术研究所]

Aliases and Former Names:

- 303 Institute [303 所]
- China Precision Engineering Institute for Aircraft Industry [北京航空精密机械研究所]
- Precision Institute [精密所]

Notable Products/Services: ultra-precision processing technology and equipment, precision CNC technology and equipment, navigation testing, motion simulation technology and equipment¹⁴¹⁸

Immediate Parent Institution: China Aviation Manufacturing Technology Institute¹⁴¹⁹

Address: No. 5, Nanyuan East Road, Fengtai District, Beijing [北京市丰台区南苑东路 5 号]¹⁴²⁰

Website: <http://www.bj303.com/rcpy.html>

Key Data:

- Established: 30 April 1961¹⁴²¹
- Personnel: over 700 employees
- Floor space: approximately 140,000 sqm¹⁴²²

Overview:

The Beijing Precision Engineering Institute for Aircraft Industry (BPEI) is an R&D center for airborne equipment manufacturing technology, mainly responsible for R&D of precision manufacturing and precision testing technology as well as the equipment it requires. This includes ultra-precision processing technology and equipment, precision CNC processing technology, CNC coordinate measuring technology and equipment, inertial navigation testing, and motion simulation technology and equipment.¹⁴²³ BPEI research areas include optics, lasers, machinery, electronic automatic control, hydraulics, and computers. Aerospace products include: servo revolving platforms, speed position revolving platforms, inertial navigation test revolving platforms, angular vibration revolving platforms, linear acceleration simulation revolving

platforms, multi-axis flight simulation and motion simulation revolving platforms, comprehensive environmental test devices, fatigue test devices, and vibration test devices. Non-aerospace products include: various types of precision measuring machines, ultra-precision processing machine tools and grinding machines, digital display altimeters, electro-hydraulic servo valves, various oblong gratings, capacitance grids, induction synchronizers, and other precision components.

BPEI was one of the first scientific research institutes in China to be granted the right to import and export its products, and has the right to grant master's degrees. Much of its work has been carried out on process automation technology and equipment, as well as length and angle sensor technology and equipment.¹⁴²⁴ It has completed a number of breakthroughs for China, including: the first laser gyroscope in China, the first electro-hydraulic servo valve, the first ultra-precision lathe, the first three-axis test revolving platform, the first three-coordinate measuring machine, and the China Millennium Monument rotating platform.

Key Personnel:

- Zhang Kaifu [张开富]: Deputy Chief Engineer¹⁴²⁵

Equipment/Facilities:

- Three research rooms
- Three business departments
- Two production trial departments
- Precision machining center
- Precision manufacturing technology aviation science and technology key laboratory
- Aerospace precision manufacturing technology center
- Various ultra-clean, constant temperature, and constant humidity laboratories
- Aviation Key Laboratory of Science and Technology on Precision Manufacturing [精密制造技术航空科技重点实验室]
 - Previously a Defense S&T Key Lab, this lab was downgraded around 2006; it conducts research on ultra-precision machining and process technology¹⁴²⁶
- Beijing National Defense Metrology Station 1016 calibration laboratory [北京国防计量站 1016 校准室]
- Labs containing more than 300 sets of processing equipment of various types, of which more than 30 sets consist of high-precision CNC processing equipment, along with a variety of high-precision testing equipment.¹⁴²⁷

11.3. Research Institute for Special Structures of Aeronautical Composites [济南特种结构研究所]

Aliases and Former Names:

- 637 Institute [637 所]
- AVIC Research Institute for Special Structures of Aeronautical Composites [航空工业济南特种结构研究所]
- AVIC Research Institute for Special Structures of Aeronautical Composites [中国航空工业集团公司济南特种结构研究所]
- AVIC Special Institute [航空工业特种所]

Notable Products/Services: aircraft radomes¹⁴²⁸

Immediate Parent Institution: China Aviation Manufacturing Technology Institute¹⁴²⁹

Corporate Ownership: AVIC [中国航空工业集团公司] (100%)¹⁴³⁰

Address: No. 19, Jiqi Road, Tianqiao District, Jinan City, Shandong Province [山东省济南市天桥区济齐路 19 号]¹⁴³¹

Website: <https://www.risac.com/>

Key Data:

- Established: September 1970, reorganized November 2008¹⁴³²

Overview:

The Research Institute for Special Structures of Aeronautical Composites (RISAC) is a specialized research institute for radomes for various types of aircraft. RISAC has capabilities in infrared/radar dual-mode radome and many other products, including radome research, basic research, design and development, experimental testing, and production support. In general, the Institute also acts as China's radome performance appraisal center.¹⁴³³

Notable Applications:

Primary R&D body for aircraft radome devices in:

- ARJ21-700, AG600 civil aircraft
- L-15, J-10, JH-17 military aircraft
- AC313 helicopter¹⁴³⁴

Notable Collaborations:

- On 5 September 2021, RISAC and Shandong University [山东大学] signed a strategic cooperation agreement, which established the Joint Laboratory of Electromagnetic Structure Technology [电磁结构技术联合实验室], a mechanism for technology sharing and support, as well as a pipeline for Shandong University students to join RISAC.¹⁴³⁵

Key Personnel:

- Xuan Lixin [轩立新]: Director¹⁴³⁶

Equipment/Facilities:

- Information Archive Center [信息档案中心]
- Measurement and Testing Technology Laboratory [计量检测技术研究室]
- Laboratory of Electromagnetic Characteristics Test Technology [电磁特性试验技术研究室]
- Manufacturing Engineering Technology Laboratory [制造工程技术研究室]
- Composite Materials Technology Laboratory [复合材料技术研究室]
- Structural Strength Technology Laboratory [结构强度技术研究室]
- Electromagnetic Characteristic Design Technology Laboratory [电磁特性设计技术研究室]
- General Technology Laboratory [总体技术研究室]¹⁴³⁷

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁴³⁸

12. Chinese Aeronautical Establishment [中国航空研究院]

Aliases and Former Names:

- Sixth Research Institute of the Ministry of National Defense [国防部第六研究院] (former)

Notable Products/Services: engineering services, research, demonstration, and verification of major key technologies

Immediate Parent Institution: AVIC¹⁴³⁹

Address: No.14 Xiao Guan Dong Li, Chaoyang District, Beijing [北京市朝阳区小关东里 14 号中国航空研究院纪委]¹⁴⁴⁰

Website: <https://www.cae.ac.cn/>

Archived: <https://web.archive.org/web/20220815013323/https://www.cae.ac.cn/>

Key Data:

- Established: 1960¹⁴⁴¹

Overview:

The Chinese Aeronautical Establishment (CAE) is mainly engaged in exploratory, preliminary, and basic research, demonstration, and verification of major key technologies. CAE's fields of specialty include: overall demonstration and systems engineering, airworthiness standards and quality, metrology technology and services, structural strength technology, pneumatic technology, S&T information research and consulting, and file management and services.¹⁴⁴²

In October 2016, AVIC integrated the relevant resources of the former AVIC Basic Institute [中航工业基础院], AVIC Economic Institute [中航工业经济院], and the original Chinese Aeronautical Establishment to form a new Chinese Aeronautical Establishment.¹⁴⁴³

Notable Collaborations:

- Various international aeronautics research institutes and wind tunnel facilities, including:
 - DLR (Germany)
 - ONERA (France)
 - TsAGI (Russia)
 - SibNIA (Russia)
 - NLR (Netherlands)
 - DNW (Netherlands)
 - NRC (Russia)
 - CIRA (Italy)
 - KARI (South Korea)
 - ESI (France)
 - International Forum for Aviation Research (IFAR)
 - International Council of the Aeronautical Sciences (ICAS)¹⁴⁴⁴

Known Subsidiaries:

- China Aero-Polytechnology Establishment [中国航空综合技术研究所]
- Changcheng Institute of Metrology & Measurement [北京长城计量测试技术研究所]
- Aircraft Strength Research Institute [中国飞机强度研究所]
- AVIC Aerodynamics Research Institute [中国航空工业空气动力研究院]
- Aviation Industry Development Research Center of China [中国航空工业发展研究中心]
- China Aviation Industry Archives [中国航空工业档案馆]
- Graduate School of China Academy of Aeronautics [中国航空研究院研究生院]
- Hefei Aerospace Electrical Physics Technology Co., Ltd. [合肥航太电物理技术有限公司]¹⁴⁴⁵

Key Personnel:

- Sun Cong [孙聪]: Director; Chief designer of the J-11, J-15, and FC-31 aircraft; Academician¹⁴⁴⁶
- Xu Donglai [徐东来]: Deputy Director; Party Secretary¹⁴⁴⁷

Equipment/Facilities:

- 4m continuous transonic wind tunnel (FL-62)
- 1.2m sub-supersonic wind tunnels (FL-2, FL-60)
- 8x6m open/closed backflow low speed wind tunnel (FL-10)
- 4.5mx3.5m low-speed supercharged wind tunnel (FL-9)
- Full-scale aircraft static/fatigue test facility
- Climate environmental adaptability verification facility
- Aircraft structure thermal strength test facility
- Discrete source impact test facility
- Aircraft structural comprehensive environmental strength test facility
- Environmental reliability equipment and facilities¹⁴⁴⁸

12.1. AVIC Aerodynamics Research Institute [中国航空工业空气动力研究院]

Aliases and Former Names:

- AVIC Aerodynamic Institute [航空工业气动院]
- Shenyang Institute of Aerodynamics [沈阳空气动力研究所] (Merged with Harbin Institute of Aerodynamics)
- Harbin Institute of Aerodynamics [哈尔滨空气动力研究所] (Merged with Shenyang Institute of Aerodynamics)
- 626 Institute [626所] (former)
- 627 Institute [627所] (former)

Notable Products/Services: aerodynamic design, numerical simulation and evaluation, wind tunnel testing

Immediate Parent Institution: Chinese Aeronautical Establishment¹⁴⁴⁹

Address:

- Mailbox 701, No. 1 Yangshan Road, Huanggu District, Shenyang City, Liaoning Province [辽宁省沈阳市皇姑区阳山路 1 号 701 信箱]¹⁴⁵⁰
- No. 2, Yiman Street, Nangang District, Harbin, Heilongjiang, China [中国·黑龙江省哈尔滨市南岗区一曼街 2 号]¹⁴⁵¹

Website: www.avicari.com.cn

Key Data:

- Established: 1955 (original),¹⁴⁵² 26 July 2000¹⁴⁵³
- Personnel: over 800 personnel¹⁴⁵⁴

Overview:

The AVIC Aerodynamics Research Institute (ARI) is AVIC's only research institution specializing in aerodynamics.¹⁴⁵⁵ ARI focuses on military and civil aerospace aerodynamic design, numerical simulation and evaluation, and wind tunnel testing. Areas of research include intake port test technology, dynamic test technology, thrust vector test technology, flow field display and measurement test technology, high-precision balance design and standard technology, and dynamic simulation test technology.¹⁴⁵⁶ In addition to the aerospace sector, it also provides wind tunnel testing and comprehensive aerodynamic technical services for China's high-speed rail, automobile, and other civilian industries. It actively carries out Military-civil fusion (MCF).¹⁴⁵⁷

ARI was created from a merger between the Shenyang Institute of Aerodynamics [沈阳空气动力研究所] (626 Institute) and the Harbin Institute of Aerodynamics [哈尔滨空气动力研究所] (627 Institute) in July 2000.¹⁴⁵⁸ It was a part of the first batch of fluid mechanics graduate training centers authorized by the Ministry of Education. In 2002, it was approved to set up a post-doctoral research station.¹⁴⁵⁹ ARI has bases in Shenyang and Harbin, and has conducted thousands tests with nearly all major Chinese aircraft over the course of its history.¹⁴⁶⁰ Another research station, ARI's Southern Base, was scheduled to finish construction in Liyang [溧阳], Jiangsu Province before the end of 2021.

Notable Collaborations:

Domestic:

- China Automotive Engineering Research Institute (CAERI)¹⁴⁶¹

International:

- Has established cooperative relations or jointly carried out cooperation projects with the following universities and research institutes:
 - WMU (possibly Western Michigan University) (U.S.)
 - Aircraft Research Association (ARA) (U.K.)
 - UoC (unclear which university this refers to) (U.K.)
 - UoS (unclear which university this refers to) (U.K.)
 - Central Institute of Aerodynamics and Fluid Dynamics (TsAGI) (Russia)
 - French Aerospace Lab (ONERA) (France)
 - Italian Aerospace Research Centre (CIRA) (Italy)
 - Germany Aerospace Center (DLR) (Germany)
 - German-Dutch Wind Tunnels (DNW) (Germany, Netherlands)
 - Hong Kong University of Science and Technology (HKUST) (Hong Kong)¹⁴⁶²

Key Personnel:

- Yuan Li [袁立]: Director
- Li Chen [李晨]: Party Committee Secretary
- Yu Yanze [于彦泽]: Deputy Director
- Zhang Lianhe [张连河]: Deputy Chief Engineer
- Chen Bao [陈宝]: Deputy Chief Engineer¹⁴⁶³
- Cui Xiaochun [崔晓春]: Chief Engineer¹⁴⁶⁴

Equipment/Facilities:

- Sub-transonic and ultra-high-speed wind tunnels
 - Largest continuous transonic wind tunnels in Asia
- Low-speed wind tunnel
 - Only low-speed pressurized wind tunnel in Asia
- 8-meter-level recirculation wind tunnel
- 1330 teraflops/second high-performance computing cluster
 - Provides high and low speed aerodynamic comprehensive technical services and solutions for various aerospace vehicles, high-speed rail, automobile, construction, and wind power applications¹⁴⁶⁵
- Seven FL-2 and FL-8 wind tunnels, 6 more under construction.¹⁴⁶⁶
- 4 provincial and ministerial-level key laboratories and nearly 20 scientific research and innovation teams

12.2. Aircraft Strength Research Institute [中国飞机强度研究所]

Aliases and Former Names:

- 623 Institute [623 所]
- Strength Institute [强度所]

Notable Products/Services: aircraft structural strength research and verification, reliability design technology, aviation noise reduction

Immediate Parent Institution: AVIC/Chinese Aeronautical Establishment¹⁴⁶⁷

Address: No. 86, Electronic Second Road, Xi'an City, Shaanxi Province [陕西省西安市电子二路 86 号]

Website: <https://asri.avic.com/>

Key Data:

- Established: 1965
- Assets: 250 million RMB
- Items Produced: completed more than 3 million material component tests for China's aviation industry¹⁴⁶⁸
- Floor space: 476,667 sqm (715 mu) across three centers¹⁴⁶⁹

Overview:

The Aircraft Strength Research Institute (ASRI) is the only aircraft strength research center and ground strength verification test base for China's aviation industry. It primarily conducts research and ground verification testing on aircraft structural strength.¹⁴⁷⁰ This includes aircraft structure fatigue fracture resistance, reliability design technology, aircraft structure dynamic strength, composite material structure strength, aviation noise reduction, aircraft structure comprehensive environmental strength, aircraft structure test technology, and other fields. ASRI claims to have completed static testing of 9 different aircraft series, complete fatigue testing of 5 different aircraft series, and ground resonance testing of more than 80 different aircraft series.

ASRI was founded in 1965 and reorganized to absorb the 629 Institute (Structural Thermal Strength Institute [结构热强度研究所]). In 1993 the headquarters moved to Xi'an.¹⁴⁷¹ The headquarters of the Institute is located in the Electronic City Industrial Park in the Xi'an High-tech Development Zone [西安市高新技术开发区电子城产业园区]. At present, it has formed a "one headquarters, two new districts" layout, with Xi'an as the headquarters, Yanliang New District [阎良新区] as the military aircraft scientific research center, and Shanghai New District [上海新区] as the civil aircraft scientific research center.¹⁴⁷²

Notable Applications:

- HAJF comprehensive large-scale aircraft testing software system. The software is supported by the strength test database and provides basic solution functions such as static strength analysis, dynamic strength, thermal strength, aeroelasticity, and design optimization for aircraft structures, covering the entire process of aeronautical structure design, optimization, and strength test verification.¹⁴⁷³
- Wing pressurization limit load verification testing on the C919 aircraft¹⁴⁷⁴

Notable Collaborations:

Domestic:

- ASRI and the Xi'an Aviation Base [西安航空基地] held a domestic structural strength analysis software (HAJIF) exchange and cooperation meeting in March of 2021. This was intended to build a communications and cooperation platform for large, medium, and small aviation enterprises and universities to understand and master domestic industrial software and promote domestic independence.¹⁴⁷⁵

Known Subsidiaries:

- China Aircraft Strength Research Institute Shanghai Branch [中国飞机强度研究所上海分部]¹⁴⁷⁶

Key Personnel:

- Nie Xiaohua [聂小华]: Computational Mechanics Deputy Chief Engineer [计算力学专业副总师]¹⁴⁷⁷

Equipment/Facilities:

- China's largest full-scale aircraft structure static/fatigue key laboratory
 - Includes testing capabilities for ground vibration tests, composite material structure strength testing under humid and hot conditions, drop and shimmy tests for landing gear, vibration testing, aviation noise testing, and comprehensive environmental strength testing¹⁴⁷⁸

12.3. Aviation Industry Development Research Center of China [中国航空工业发展研究中心]

Aliases and Former Names:

- 620 Institute [620 所] / Aviation Industry Information Center [航空工业信息中心]
- 628 Institute [628 所] / China Institute of Aeronautic System Engineering [中国航空系统工程研究所] / Aviation System Engineering Institute of China [中国航空系统工程研究所]

Notable Products/Services: aviation industry services, development strategies and planning, economic operations analysis¹⁴⁷⁹

Immediate Parent Institution: Chinese Aeronautical Establishment¹⁴⁸⁰

Address: No. 14 Xiaoguangdongli, Chaoyang District, Beijing [北京市朝阳区小关东里 14 号]¹⁴⁸¹

Website:

<https://web.archive.org/web/20190222213359/http://www.adr.org.cn/>

Key Data:

- Established: 2001¹⁴⁸²
- Personnel: over 300 researchers¹⁴⁸³

Overview:

The Aviation Industry Development Research Center of China (ADR) [中国航空工业发展研究中心] was founded in 2001 by the combination of Aviation Industry Information Center (628 institute) and Aviation System Engineering Institute of China (620 institute).¹⁴⁸⁴ It conducts research, consulting, and services for industrial development, product development, technology development, business management, information technology, engineering projects, and intellectual property.¹⁴⁸⁵ It is the first service agency established by the Ministry of Industry and Information Technology for the purpose of accelerating military-civil fusion.¹⁴⁸⁶

In 1990, it was identified by the State Education Commission as a master's degree-granting unit for science and technology information, and in 1993, it was identified as a national first-level innovation consulting unit by the State Science and Technology Commission.¹⁴⁸⁷

Notable Collaborations:

Domestic:

- Maintains close contact and cooperation with the China Institute of Science and Technology Information [中国科学技术信息研究所] in Beijing, as well as other information institutions connected to more than a dozen industries such as machinery, electronics, aerospace, and shipbuilding¹⁴⁸⁸
- Held discussions and exchanges on the application prospects for large aviation emergency firefighting aircraft with the Southern Airlines Forest Guard Station [南方航空护林总站]. The two sides conducted in-depth discussions on the distribution of forest resources, topography, climatic characteristics, and wildfire occurrences in southern China.¹⁴⁸⁹

Key Personnel:

- Liu Wensheng [刘文胜]: Deputy Chief Engineer¹⁴⁹⁰

Equipment/Facilities:

- Aircraft System Engineering Research Department [飞机系统工程研究部]
- Economic System Engineering Research Laboratory [经济系统工程研究室]
- Aviation Product Market Systems Engineering Research Laboratory [航空产品市场系统工程研究室]
- Computer and Simulation Technology Research Laboratory [计算机和仿真技术研究室]
- Aviation Industry Information Research Laboratory [航空工业情报研究室]¹⁴⁹¹
- Before reorganization, the China Aviation Information Center [中国航空信息中心] consisted of:
 - Integrated Services Department [综合业务部]
 - Jinhang Network Operation Center [金航网路运行中心]
 - Information Resources Department [信息资源部]
 - Information Consulting Department [信息咨询部]
 - Marketing and Strategy Consulting Department [市场与战略咨询部]
 - Publishing House [出版社工作部]

- Journal Work Department [期刊工作部]
- Audiovisual Work Department [声像工作部]
- Printing Factory [印刷厂]
- Beijing Aviation Technology Exchange Service Center [北京航空技术交流服务中心]¹⁴⁹²
- Appears to have an (AVIC) Weapons and Equipment Mobilization Research Center [(航空工业)武器装备动员研究中心].¹⁴⁹³

12.4. Changcheng Institute of Metrology & Measurement [北京长城计量测试技术研究所]

Aliases and Former Names:

- 304 Institute [304 所]
- Aviation Industry Metrology Institute [航空工业计量所]

Notable Products/Services: measurement and calibration instruments, test systems, sealing components, accelerometers, sensors

Immediate Parent Institution: AVIC/Chinese Aeronautical Establishment¹⁴⁹⁴

Address: Huanshan Village, Wenquan Town, Haidian District, Beijing [北京市海淀区温泉镇环山村]

Website: <http://www.cimm.com.cn/>

Key Data:

- Established: 1961

Overview:

The Changcheng Institute of Metrology & Measurement (CIMM) is a scientific research institution integrating metrology technology research and industry management. CIMM focuses on the following: R&D of measurement instruments, calibration devices, and test systems, tracking new domestic and foreign metrology and testing technologies, researching new measurement theories and methods, researching calibration methods for scientific research and testing, developing and producing sealing components, accelerometers, and sensors, and developing measurement and testing software and hardware systems.¹⁴⁹⁵ CIMM is actively pursuing research on cutting-edge technologies such as dynamic testing and calibration, nanometer measurement and calibration, femtosecond laser measurement, and non-contact measurement.

Notable Applications:

- Assisted the Hong Kong-Zhuhai-Macao Bridge subsea tunnel immersed tube [港珠澳大桥海底隧道沉管] by developing a real-time monitoring system for the motion and posture of the tube section, which was used to solve the problem of precise docking in the deep sea. This breakthrough involved the development of high-frequency response load sensors and dynamic multi-component force sensors.
- Developed and produced China's first large-scale measurement type nanometer three-dimensional measuring machine and a variety of advanced nanometer measuring sensors, a dynamic temperature and flow velocity calibration wind tunnel series to provide accurate measurements in the development and testing of aircraft.
- A series of vibration, shock, sine, pulse, step and other calibration devices to meet the measurement requirements of industrial equipment for structural integrity and reliability.
- Sensor series which use quasi-distributed multi-parameter measurement to monitor the structural health of aircraft, while also having applications in civil fields such as wind power and rail transit. These products are widely used in aviation, aerospace, shipbuilding, high-speed rail and other fields.
- Large-scale intermediate frequency induction heating furnace for the world's first 10,000-ton oil-pressure double-action aluminum extrusion press.¹⁴⁹⁶

Notable Collaborations:

International:

- Hosted the International Symposium on Dynamic Measurement [动态测量国际学术研讨会] on 28 May 2019, which featured over 120 experts and representatives from the U.K., Germany, and Ukraine, including the British National Metrology Institute.¹⁴⁹⁷

Key Personnel:

- Cao (only surname given) [曹]: Director¹⁴⁹⁸
- Song Qingguo [宋庆国]: Party Group Secretary¹⁴⁹⁹
- Zhou Baofu [周保富]: Party Committee Secretary¹⁵⁰⁰
- Tian Yongwei [田永卫]: Specialist Chief Instructor [专业总师]¹⁵⁰¹

Equipment/Facilities:

- National Key Laboratory of Metrology and Calibration Technology [计量与校准技术国家级重点实验室]
- Dynamic Testing and Calibration Technology Aviation Science and Technology Key Laboratory [动态测试与校准技术航空科技重点实验室]¹⁵⁰²
- Flight Load Spectrum Test and Research Center [飞行载荷谱测试研究中心]¹⁵⁰³
- The Cold Atom Interferometric Gravity Measurement Laboratory [冷原子干涉重力测量实验室]

- Structural Strength and Optical Fiber Sensing Technology Research Center [结构强度与光纤传感技术研究中心]
- Ultrafast Quantum Metrology Laboratory [超快量子计量实验室]
- Load Sensor Product Display Room [负荷传感器产品展示间]¹⁵⁰⁴

12.5. AVIC China Aero-Polytechnology Establishment [中国航空综合技术研究所]

Aliases and Former Names:

- 301 Institute [301 所]
- 综合所

Notable Products/Services: technology testing and evaluation services, aviation equipment, defense equipment, radiation equipment

Immediate Parent Institution: AVIC/Chinese Aeronautical Establishment¹⁵⁰⁵

Address: No. 7 Jingshun Road, Chaoyang District, Beijing [北京市朝阳区京顺路七号]

Website: <https://www.cape.avic.com/>

Archived: <https://web.archive.org/web/20220815025201/https://www.cape.avic.com/>

Key Data:

- Established: 1970
- Personnel: over 1,300 employees, including over 800 R&D personnel
- Floor space: total 120,000 sqm at two main locations¹⁵⁰⁶

Overview:

The AVIC China Aero-Polytechnology Establishment (CAPE) provides improvements to aviation equipment, defense equipment, and radiation equipment manufacturing. It provides standardization, quality engineering, and airworthiness technology research and services.

CAPE has established three major service product divisions. As a "quality enhancer," the Equipment Service Product Department [装备服务产品部] provides technical services such as standardization, quality engineering, airworthiness, and third-party testing and identification services. It provides think-tank decision-making support and professional consulting services to the central and military authorities, national ministries, and local governments, and promotes industry reform and progress.¹⁵⁰⁷

Known Subsidiaries:

- Huazhi Excellent Productivity Promotion (Beijing) Co. Ltd. [华质卓越生产力促进（北京）有限公司]
- Hangxing International Automatic Control Engineering Co. Ltd. [航星国际自动控制工程有限公司]
- Beijing China Airlines Exhibition Co. Ltd. [北京华航展览有限责任公司]
- Beijing Airlines Certification Center Co. Ltd. [北京航协认证中心有限责任公司]¹⁵⁰⁸

Key Personnel:

- Zhao Bo [赵波]: Director; Deputy Party Committee Secretary
- Sun Dongwei [孙东伟]: Deputy Director; Party Committee Secretary
- Ren Zhanyong [任占勇]: Deputy Director; Marketing Center Director [营销中心总监]
- Xiu Deliang [修德亮]: Discipline Inspection Committee Secretary; labor union Chairman
- Li Yong [李勇]: Deputy Director
- Xu Ming [徐明]: Chief Technology Officer
- Huang Yumin [黄毓敏]: Deputy Director
- Jiang Jiadong [蒋家东]: Chief Engineer
- Gu Xi [辜希]: Specialist [专务]
- Wang Lijian [王礼健]: Specialist¹⁵⁰⁹

Equipment/Facilities:

- National Defense Technology Industry Standardization Research Center [国防科技工业标准化研究中心]
- National Machinery and Electronic Product Environmental and Reliability Quality Supervision and Inspection Center [国家机械电子产品环境与可靠性质量监督检验中心]

12.6. AVIC Hefei Hangtai Electrophysics Co., Ltd [合肥航太电物理技术有限公司]

Aliases and Former Names:

- (AVIC) (Hefei) Aerospace Corporation [(中航工业)(合肥)航太公司]¹⁵¹⁰
- Hefei Institute of Aerospace Electric Physics and Technology [合肥航太电物理技术研究所] (former)¹⁵¹¹

Notable Products/Services: aerospace vehicle lightning protection and effects, aircraft scaled model partitions¹⁵¹²

Immediate Parent Institution: Chinese Aeronautical Establishment¹⁵¹³

Corporate Ownership:

- China Flight Test Research Institute [中国飞行试验研究院] (50.9954%)
- Rest of shares held by 5 individual shareholders¹⁵¹⁴

Address: No. 105, Xueyuan Road, Shushan District, Hefei, Anhui Province [安徽省合肥市蜀山区科学院路 105 号]¹⁵¹⁵

Website: <http://htiep.com/index.asp>

Archived: <https://web.archive.org/web/20220228055950/http://htiep.com/index.asp>

Key Data:

- Established: 6 July 1995¹⁵¹⁶
- Personnel: over 60 employees
- Floor space: over 33,333 sqm (50 mu)^{1517 1518}

Overview:

Hefei Aerospace Electrophysics Technology Co., Ltd. (HTIEP) specializes in research on lightning and electrostatic protection of aerospace vehicles (including aircraft, helicopters, missiles, rockets, spaceships, etc.). It has designed a large number of aircraft lightning electromagnetic pulse and electrostatic protection systems. It oversees the only large-scale professional aircraft lightning protection laboratory in China.

HTIEP was formerly the Hefei Aerospace Electrophysics Technology Research Institute of the Anhui Provincial Science and Technology Commission. It is today located in Shushan New Industrial Park in Hefei. It was previously under the now-defunct AVIC Basic Technology Research Institute [基础技术研究院],¹⁵¹⁹ and then the Chinese Flight Test Establishment [中国飞行试验研究院], from which it transferred to CAE in 2021.¹⁵²⁰

Notable Collaborations:

International:

- Lightning tests for EC175/Z-15 helicopter, jointly developed by China and France.¹⁵²¹

Known Subsidiaries:

- Anhui Key Laboratory of Aircraft Lightning Protection [飞机雷电防护安徽省重点实验室]¹⁵²²

Key Personnel:

- Zhang Yi [张焱]: Chairman¹⁵²³

Equipment/Facilities:

- Large Special Flight Vehicle Lightning Protection Laboratory [大型专业飞行器雷电防护实验室]¹⁵²⁴
 - China's only large-scale professional aircraft lightning protection

13. Chinese Flight Test Establishment [中国飞行试验研究院]

Aliases and Former Names:

- 630 Institute [630 所]
- AVIC Flight Test Center [航空工业试飞中心]
- Flight Test Institute [试飞院]
- China Flight Test Research Institute [中国飞行试验研究院]
- Xi'an Flight Test Research Institute [西安飞行试验研究所] (possibly former)

Notable Products/Services: aircraft testing, airworthiness certification

Immediate Parent Institution: AVIC¹⁵²⁵

Address: No. 8, Test Feiyuan Road, Yanliang District, Xi'an, Shaanxi Province [陕西省西安市阎良区试飞院路 8 号]¹⁵²⁶

Website: <http://www.cfte.com.cn> or <http://cfte.zhiye.com/> (recruiting site)

Archived: <https://web.archive.org/web/20100804095533/http://www.cfte.com.cn/>

Archived: <https://web.archive.org/web/20220122214812/http://cfte.zhiye.com/>

Key Data:

- Established: 15 April 1959¹⁵²⁷
- Personnel: over 2,000 employees¹⁵²⁸

Overview:

The Chinese Flight Test Establishment (CFTE) is tasked with appraising test flights of military and civil aircraft, helicopters, aero engines, airborne equipment, and other aviation products. It provides airworthiness certification for civil aircraft, and conducts research on flight technology and flight test methods.¹⁵²⁹ Research areas include flight mechanics, strength load,

flight quality, vibration and acoustics, power plants, flight control, flight simulation, automatic control and identification, reliability and maintainability, data processing, and aircraft systems and equipment.¹⁵³⁰

CFTE is described as a national "aircraft airworthiness accreditation laboratory."¹⁵³¹ In addition to testing of China's aircraft, CFTE has also participated in the development of China's intercontinental ballistic missiles.¹⁵³²

Notable Collaborations:

Domestic:

- Aviation meteorological cooperation in August 2021 with Northwestern University (China) [西北大学] and Xi'an Yiji Technology [西安易辑科技]. The parties were particularly interested in big data and developing a joint platform for meteorological research.¹⁵³³

Key Personnel:

- Wang Jianjun [王建军]: Deputy Director
- Zhao Guoqing [赵国清]: Human Resources Department Director [人力资源部部长]; Party Cadre Department Director [党委干部部部长]
- Du Hailang [杜海浪]: Technology Center Field Affairs Department Director [技术中心场务部主任]
- Yang Tao [杨涛]: Meteorological Observatory Director [气象台台长]
- Wang Zelin [王泽林]: Meteorological Observatory Deputy Director [气象台副台长]
- Guo Chenyang [郭晨阳]: Field Service Technology Research Office Deputy Director [场务技术研究室副主任]¹⁵³⁴
- Bao Zhu [包竹]: Designer¹⁵³⁵
- Zhou Ziquan [周自全]: Chief Flight Test Engineer [试飞总师]¹⁵³⁶

Subsidiaries:

- China Flight General Aviation Co., Ltd. [中飞通用航空有限责任公司]
 - Class A general aviation enterprise and the largest general aviation enterprise operating domestic MA60 and ARJ21 aircraft fleets.
 - Currently operates 28 general aviation aircraft of various types.
 - Main operation base in Xi'an Yanliang Airport.
 - Three holding subsidiaries: Xi'an Xinyu Aviation Maintenance Engineering Co., Ltd., Xi'an Zhongfei Aviation Club Co., Ltd., and Shaanxi Neifuzhong Airport Management Co., Ltd.¹⁵³⁷

Equipment/Facilities:

- All-weather flight and navigation support equipment¹⁵³⁸
- Two runways with total length 3,400 meters total length, meeting military requirements.¹⁵³⁹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁵⁴⁰

CIVIL AVIATION

AVIC's civil aviation business was curtailed in 2008, when it spun off some of its assets to form the Commercial Aircraft Corporation of China (COMAC) [中国商用飞机有限责任公司 (中国商飞)]. However, it still oversees a significant civil/general aviation program, primarily overseen by its subsidiary, China Aviation General Aircraft (CAIGA). In addition to a wide range of civilian aircraft and UAVs, CAIGA subsidiaries also produce some military aviation products, includingUCAVs, aerostats and other special mission products, and military aviation parts.

AVIC continues to hold a major stake in COMAC,¹⁵⁴¹ and helped develop much of COMAC's C919 airliner (along with Western firms such as GE), which entered service in 2023 and aims to compete with Boeing's 737 and Airbus' A320.¹⁵⁴²

14. China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司]

Aliases and Former Names:

- AVIC General Aircraft
- AVIC Tongfei [中航工业通飞]

Notable Products/Services: civil aircraft, aerostats, other products related to civil aircraft such as forging, hydraulics, environmental control, fasteners^{1543 1544}

Immediate Parent Institution: AVIC

Corporate Ownership:

- AVIC [中国航空工业集团公司] (70%)¹⁵⁴⁵
- Guangdong Yuecai Investment Holding Co., Ltd. [广东粤财投资控股有限公司] (14%)
- Guangdong Hengjian Investment Holding Co., Ltd. [广东恒健投资控股] (10%)
- Zhuhai Gree Aviation Investment Co., Ltd. [珠海格力集团有限公司] (6%)¹⁵⁴⁶

Address: No. 1519, Yinwan Road, Xiangzhou District, Zhuhai, Guangdong Province [广东省珠海市香洲区银湾路 1519 号]¹⁵⁴⁷

Website: <https://www.avicgeneral.com/sy/index.shtml>

Archived:

<https://web.archive.org/web/20220408060155/https://www.avicgeneral.com/sy/index.shtml>

Key Data:

- Established: 2009¹⁵⁴⁸
- Capital: registered capital 11.857 billion RMB
- Assets: 53.1 billion RMB in total assets¹⁵⁴⁹

- Items produced: delivered 562 general-purpose aircraft of various types worldwide in 2021
- Personnel: 18,400 employees¹⁵⁵⁰

Overview:

The China Aviation Industry General Aircraft Co. (CAIGA) is China's largest company specializing in general aircraft R&D, manufacturing, and operation services. CAIGA's aviation products include business, private, multi-purpose, and special-purpose aircraft, as well as aerostats.¹⁵⁵¹ Besides developing and constructing civil aircraft, CAIGA's other business operations include forging, hydraulic, environmental control, and fasteners.¹⁵⁵²

In addition to supporting various domestic aircraft and engine avionics systems, civil products are mainly used in hydraulic systems and lubrication systems in construction machinery, air compressors, wind power generation, medical treatment, high-speed rail, and other industries. CAIGA products are exported to Europe, America, Oceania and Asia-Pacific.¹⁵⁵³

CAIGA received investment from AVIC, Guangdong Yuecai Holdings [广东粤财], Guangdong Hengjian Holdings [广东恒健] and Gree Electric Aviation [珠海格力航]. It holds a controlling stake in two domestic A-share listed companies, AVIC Heavy Machinery [中航重机] and AVIC Electronic Measuring Instruments Co. [中航电测]. It also wholly owns the U.S. civil aircraft manufacturer Cirrus Aircraft.

Notable Applications:

- AG600 large special-purpose civil aircraft
- Cirrus Vision Jet SF50 [愿景喷气机 SF50]
- Cirrus SR-2X
- Kitty Hawk 500 [小鹰 500 飞机]
- Seagull 300 [海鸥 300]
- Y-5B aircraft [运五 B 飞机]
- A2C ultra-light seaplane [A2C 超轻水上飞机]
- AG300
- AG100
- AG50 light sport aircraft [AG50 轻型运动飞机]
- LF910/Lingfei 910 ground effect aircraft [领飞 910 地效飞行器]

Known Subsidiaries: ¹⁵⁵⁴

- Tongfei North China Aircraft Industry/Shijiazhuang Aircraft Manufacturing Company [通飞华北飞机工业/石家庄飞机制造公司]
- AVIC Special Aircraft Research Institute [特种飞行器研究所]
- Hanzhong Aviation Industry Group [汉中航空工业集团]
- Hanzhong Hanhang Electromechanical Co., Ltd. [汉中汉航机电有限公司]
- Guizhou Aviation Industry Group [贵州航空工业集团]
- Guizhou Southwest Tools (Group) Co., Ltd. [贵州西南工具(集团)有限公司]
- AVIC Heavy Machinery Co., Ltd. [中航重机股份有限公司]

- CESSNA-AVIC Aircraft (Zhuhai) Co., Ltd. [珠海中航塞斯纳飞机有限公司]
- Tongfei Zhuhai Composites Technology Branch [通飞珠海复材科技分公司]
- Cirrus Aircraft [西锐工业公司] (US)
- Zhuhai General Aviation R&D and Manufacturing Base [珠海通用航空研发制造基地]
- AVIC General Huanan Aircraft Industry Co., Ltd. [中航通飞华南飞机工业有限公司]
- China Aviation Industry Standard Parts Manufacturing Co., Ltd. [中国航空工业标准件制造有限责任公司]
- Guizhou Pingshui Machinery Co., Ltd. [贵州平水机械有限责任公司]
- Shenzhen Guihang Industry Co., Ltd [深圳贵航实业有限公司]
- CAIGA Research Institute [中航通飞研究院/中航通飞研究院有限公司/通航研发中心/中航通用飞机设计研究院] (may have been disbanded)
- Zhuhai AVIC General Aviation Co., Ltd. [珠海中航通用航空有限公司]¹⁵⁵⁵
 - General aviation company with total assets of 850 million, more than 50 aircraft lines including King Air 350, Y-12, Cessna 208B, Y-5B, and Kitty Hawk 500. It oversees Hebei AVIC General Aviation, Inner Mongolia General Aviation, and Jingmen General Aviation [内蒙古通用航空股份有限公司, 河北中航通用航空有限公司, 荆门通用航空有限责任公司].¹⁵⁵⁶
- AVIC General Aircraft Zhejiang Institute Co., Ltd.
 - Present on U.S. Department of Commerce Entity List¹⁵⁵⁷
 - Present on U.S. Department of Commerce Military End-User List¹⁵⁵⁸
 - Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁵⁵⁹

Key Personnel:

- Bai Xiaogang [白小刚]: Chairman; Party Secretary
- Yang Lei [杨雷]: CEO; Deputy Party Secretary
- Zhang Shuwei [张枢玮]: Deputy CEO
- Liu Aiyi [刘爱义]: Deputy Party Secretary; Discipline Inspection Commission Secretary
- Li Dongtao [李东涛]: Deputy CEO
- Xiong Jianpeng [熊贤鹏]: Deputy CEO
- Chen Xiaoyi [陈晓毅]: Deputy CEO
- Liu Mingtao [刘明涛]: Chief Accountant¹⁵⁶⁰
- Zhou Zequn [周泽群]: Vice Chairman¹⁵⁶¹

14.1. CESSNA-AVIC Aircraft (Zhuhai) Co., Ltd. [珠海中航塞斯纳飞机有限公司]

Notable Products/Services: turbofan aircraft, parts and components for medium to light aircraft¹⁵⁶²

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: Unit B, 2nd Floor, Building 203, No. 999 Jinhai Middle Road, Jinwan District, Zhuhai, Guangdong Province [珠海市金湾区金海中路 999 号 203 栋二层 B 单元]¹⁵⁶³

Overview:

CESSNA-AVIC Aircraft Zhuhai is engaged in R&D, final assembly, and service of turbofan-powered general aviation aircraft and parts and components for the medium to light aircraft market, as well as providing related technical training.¹⁵⁶⁴

14.2. China Aviation Industry Standard Parts Manufacturing Co., Ltd. [中国航空工业标准件制造有限责任公司]

Aliases and Former Names:

- AVIC Beacon [中航工业航标]
- China Aviation Ind. Std. Parts

Notable Products/Services: standard parts, fasteners, seals, auto parts, molds¹⁵⁶⁵

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Corporate Ownership:

- Guizhou Gaike Aviation Electromechanical Co., Ltd. [贵州盖克航空机电有限责任公司] (57.452%)
- AVIC [中国航空工业集团公司] (42.548%)¹⁵⁶⁶

Address:

- No. 649, Baiyun Road, Baiyun District, Guiyang City, Guizhou Province [贵州省贵阳市白云区白云南路 649 号]¹⁵⁶⁷
- No. 355, Baiyun Road, Baiyun District, Guiyang City, Guizhou Province [贵州省贵阳市白云区白云南路 355 号]¹⁵⁶⁸

Website: <http://www.zhb3117.com>

Key Data:

- Established: 1993 (in current form)¹⁵⁶⁹
- Capital: 343.99 million RMB in registered capital¹⁵⁷⁰
- Personnel: over 1,600 employees
- Floor space: total area of 140,000 sqm; production area of approximately 50,000 sqm¹⁵⁷¹

Overview:

The China Aviation Industry Standard Parts Manufacturing Co. (ZHB) is the only research and production base for complete machines and full series of standard parts and small parts in the PRC aviation industry. It provides support to various military aerospace programs. Its main products are fasteners, which are made from titanium alloys and superalloys and are used in many types of aircraft and aero-engines.¹⁵⁷² The company has obtained the accreditation as a "National Defense Science and Technology Laboratory" and "National China Conformity Assessment Laboratory," as well as CMA measurement certification.

In its current form, AVIC Standard Parts was established in December 1993 and is now located in Baiyun District, Guiyang City, Guizhou Province.

Notable Applications:

- C919 aircraft parts¹⁵⁷³

Notable Collaborations:*Domestic:*

- Supplier for AECC CAE

International:

- Supplier for GE-Aviation, Schlumberger, Honeywell¹⁵⁷⁴

Key Personnel:

- Li Jian [李健]: Chairman
- Wang Mingxiang [王明翔]: CEO¹⁵⁷⁵

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁵⁷⁶

14.3. China National Guizhou Aviation Industry (Group) Co., Ltd. [中国贵州航空工业（集团）有限责任公司]¹⁵⁷⁷

Aliases and Former Names:

- Base 011 [011 基地]
- Guihang Group [贵航集团]
- Third Ministry of Machine Building Guiyang Office [三机部贵阳办事处] (former)
- Office 011 [011 办事处] (former)¹⁵⁷⁸
- Guizhou Aviation Industry Group [贵州航空工业集团] (former)¹⁵⁷⁹
- Guizhou Aviation Management Bureau [贵航管理局] (former)¹⁵⁸⁰

Notable Products/Services: aircraft, UAVs, aircraft engines, airborne equipment, spare parts

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.¹⁵⁸¹

Corporate Ownership: China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司] (100%)¹⁵⁸²

Address: 110 Jinjiang Road, Anshun Economic and Technology Development Zone, Guizhou Province [贵州省安顺市经济技术开发区 110 号]¹⁵⁸³

Website: <http://www.gaic.com.cn/>

Archived: <https://web.archive.org/web/20110625061227/http://www.gaic.com.cn/>

Key Data:

- Established: 1964¹⁵⁸⁴

Overview:

The China National Guizhou Aviation Industry Co. (GAIC/CAIG), also called Base 011 and the formerly Guizhou Aircraft Industry Corporation, produces aircraft, UAVs, aircraft engines, airborne equipment and relevant spare parts, and airport equipment.^{1585 1586} GAIC has focused on surveillance drones. A model of the WZ-2000, a High-Altitude Long-Endurance drone produced by GAIC first appeared at the Zhuhai Airshow in 2002.¹⁵⁸⁷ The presence of HALE UAV/UCAVs at Anshun Huangguoshu airport in 2019 is further confirmation of their new focus on becoming a major producer and tester of UAVs.¹⁵⁸⁸

The company has built parts for the J-6 and J-7 series of fighter aircraft and previously built the Harrier Hawk UAV and JL-9 jet trainer, an export version of which, the FTC-2000, is offered for international markets.¹⁵⁸⁹ It appears production of the latter two shifted to Guizhou Aviation Aircraft Co. Ltd. (GAC) after its founding in 2011.

Notable Applications:

- Parts for the J-6 and J-7 series fighter aircraft¹⁵⁹⁰
- JL-9 jet trainer¹⁵⁹¹ (prior to the founding of GAC, which took it over)
- Harrier Hawk [鹞鹰] UAV (prior to the founding of GAC, which took it over)¹⁵⁹²
- BZK-007 UAV¹⁵⁹³
- Wing Loong I [翼龙] UAV¹⁵⁹⁴
- Wing Loong II medium-altitude surveillance UAV¹⁵⁹⁵
- Soar Dragon [翔龙] HALE UAV¹⁵⁹⁶
- WZ-8 delta-winged UAV¹⁵⁹⁷

Notable Collaborations:

- Chengdu Aircraft Design Institute on the Soar Dragon [翔龙], WZ-8 UAVs¹⁵⁹⁸

Known Subsidiaries:

- Guizhou Huaxia Engineering Contracting Co., Ltd. [贵州华夏工程承包有限责任公司]
- Guizhou Guihang Investment Management Co., Ltd. [贵州贵航投资管理有限公司]
- Guizhou Guihang Industry Co., Ltd. [贵州贵航实业有限公司]
- Guizhou Guihang Service Operation Management Co., Ltd. [贵州贵航服务经营管理有限公司]
- Guizhou Guihang International Trade Co., Ltd. [贵州贵航国际贸易有限公司]¹⁵⁹⁹
- Guizhou Jinjiang Aviation Hydraulic Co., Ltd. [贵州金江航空液压有限责任公司]
- Guizhou Xixiu Industrial Trading Co., Ltd. [贵州西秀工业贸易有限公司]
- Guizhou Gaike Aviation Electromechanical Co., Ltd. [贵州盖克航空机电有限责任公司]
- Guizhou AVIC General Aircraft Co., Ltd. [贵州中航通用飞机有限责任公司]¹⁶⁰⁰

Key Personnel:

- Lu Jinglei [吕惊雷]: CEO¹⁶⁰¹

14.4. Cirrus Aircraft [西锐工业公司]

Notable Products/Services: all-composite private aircraft and associated services¹⁶⁰²

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address:

- Duluth, Minnesota (main headquarters)
- Unknown China location, possibly Zhuhai, Guangdong Province [广东省珠海市]

Website: <https://cirrusaircraft.com/cn>

Key Data:

- Established: 1984 (original)¹⁶⁰³

Overview:

Cirrus is the world's largest manufacturer of piston-based general aviation aircraft. The company specializes in the R&D and production of all-composite private aircraft.

Cirrus Aircraft has numerous authorized sales centers in North America and around the world, with products in more than 60 countries and regions. Founded in 1984 and headquartered in Duluth, Minnesota, Cirrus Aircraft was purchased by AVIC in 2011, and is/was owned through CAIGA (US) Co. Ltd., CAIGA's U.S. subsidiary.¹⁶⁰⁴

14.5. AVIC General Huanan Aircraft Industry Co., Ltd. [中航通飞华南飞机工业有限公司]

Aliases and Former Names:

- AVIC General Aircraft Huanan Industry Co. Ltd.

Notable Products/Services: large special aircraft¹⁶⁰⁵

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: Building 201, No. 999, Jinhai Middle Road, Jinwan District, Zhuhai, Guangdong [珠海市金湾区金海中路 999 号 201 栋]¹⁶⁰⁶

Website: <https://www.hn.avicgeneral.com/>

Overview:

The AVIC General Huanan Aircraft Industry Co. conducts R&D, manufacturing, sales, and service for general aviation. The company is mainly engaged in the design and development of large special aircraft, final assembly, test flights, and associated services. At present, the company is mainly involved in the development of the AG600 amphibious aircraft.¹⁶⁰⁷

The company is adjacent to Jinwan Airport in Zhuhai City, Guangdong Province.

Notable Applications:

- AG600 amphibious aircraft¹⁶⁰⁸

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁶⁰⁹
- Present on U.S. Department of Commerce Military End-User List¹⁶¹⁰
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁶¹¹

14.6. Guizhou Southwest Tools (Group) Co., Ltd. [贵州西南工具(集团)有限公司]

Aliases and Former Names: Western Industrial Group [西工集团]

Notable Products/Services: aviation precision tools, work gauges, and machine tool equipment

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: No. 218., Qingshuijiang Road, Xiaohe District, Guiyang, Guizhou Province [贵州省贵阳市小河区清水江路 218 号]¹⁶¹²

Website: www.swt.com.cn/ (possibly defunct)

Key Data:

- Established: 1966

Overview:

The Guizhou Southwest Tools Co. develops and produces aviation precision tools, air-conditioning compressor parts, work gauges, and machine tool equipment.

The company has been named as a national secondary geometric measurement center, national defense physical and chemical testing center, and provincial technology center.¹⁶¹³

14.7. Hanzhong Aviation Industry (Group) Co., Ltd. [汉中航空工业（集团）有限责任公司]

Aliases and Former Names:

- 012 Base [012 基地] (former)
- Hanzhong Aviation Industry Base [汉中航空工业基地] (former)¹⁶¹⁴
- Hanhang (Group) [汉航(集团)]¹⁶¹⁵

Notable Products/Services: special mission aircraft, transport aircraft, landing gear, display systems, flight control and inertial devices, navigation instruments, other airborne products¹⁶¹⁶

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Corporate Ownership: China Aviation Industry General Aircraft Co., Ltd. (100%)¹⁶¹⁷

Address: No. 33, Laodong East Road, Hantai District, Hanzhong City, Shaanxi Province [陕西省汉中市汉台区劳动东路 33 号]¹⁶¹⁸

Key Data:

- Established: 1964 (original), 1999 (reorganization)¹⁶¹⁹
- Capital: 167 million RMB in registered capital¹⁶²⁰

Overview:

The Hanzhong Aviation Industry Co. develops and produces special mission aircraft and medium-sized transport aircraft, landing gear, aircraft and engine parameter comprehensive display systems, flight control and inertial devices, navigation instruments, and other airborne products and non-aeronautical civil products. Industries include railway, shipbuilding, aerospace, and transportation equipment manufacturing.¹⁶²¹

Known Subsidiaries:¹⁶²²

- Shaanxi Aeronautic Carbide Tool Co., Ltd. [陕西航空硬质合金工具有限责任公司]¹⁶²³
- Shenzhen Huaxi Optoelectronics Co., Ltd. [深圳市华西光电有限公司]
- Hanzhong Aviation Industry Logistics (Group) Co., Ltd. [汉中航空工业后勤(集团)有限公司]
- Hanzhong Hongye Hotel Co., Ltd. [汉中红叶大酒店有限公司]

Key Personnel:

- Ma Yili [马义利]: Chairman; Party Secretary¹⁶²⁴
- Yang Lizhe [杨立哲]: Deputy CEO¹⁶²⁵

14.8. Hanzhong Hanhang Electromechanical Co., Ltd. [汉中汉航机电有限公司]

Notable Products/Services: electric measurement products, precision cutting tools, precision hydraulic parts, gears, avionics products

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: No. 33 Laodong Road, Hantai District, Hanzhong City, Shaanxi Province

Key Data:

- Established: 30 September 2017

Overview:

Hanzhong Hanhang Electromechanical Co., Ltd., established in 2017, engages in the R&D, manufacture, and sales of electric measurement products, precision cutting tools, precision hydraulic parts, small and medium-sized gears, and avionics products.

It owns Shaanxi Changkong Gear Co., Ltd. [陕西长空齿轮有限责任公司] (which appears to be managed in trust by AVIC EM).¹⁶²⁶

14.9. AVIC Heavy Machinery Co., Ltd. [中航重机股份有限公司]**Aliases and Former Names:**

- AVIC Heavy Machinery [中航重机]
- Guizhou Liyuan Hydraulic Co., Ltd.

Notable Products/Services: military and civilian aviation forging and casting, hydraulic environmental control products, and other dual-use products¹⁶²⁷

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Corporate Ownership:

- China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司]
- Guizhou Jinjiang Aviation Hydraulic Co., Ltd. [贵州金江航空液压有限责任公司] (21.8%)
- China National Guizhou Aviation Industry (Group) Co., Ltd. [中国贵州航空工业（集团）有限责任公司] (6.14%)
- AVIC Industry-Finance Holdings [中航工业产融控股股份有限公司] (6.13%)
- Central Enterprise Rural Industry Investment Fund Co., Ltd. (2.8%)¹⁶²⁸

Address: 5th Floor, Building A3, Taisheng International, No. 9 Airport Road, Shuanglong Airport Economic Zone, Guizhou Province [贵州省贵州双龙航空港经济区机场路9号太升国际A3栋5层]¹⁶²⁹

Website: <https://www.hm.avic.com>

Key Data:

- Established: 1968 (original form), 1996 (current form)
- Assets: 12.1 billion RMB in total assets by end of 2018
- Personnel: over 9,000 employees¹⁶³⁰

Overview:

AVIC Heavy Machinery (AVIC HM) develops and manufactures high-end military and civilian dual-use products, including aviation forging and casting and hydraulic environmental control products.¹⁶³¹ The company primarily produces aviation, military, and civilian use die forgings, free forgings, isothermal forgings, and ring forgings of different materials such as titanium alloys, superalloys, stainless steel, structural steel, aluminum alloys, magnesium alloys, copper alloys, and new intermetallic compounds. The company's forging and casting products are widely used in aviation, aerospace, shipbuilding, weaponry, electric power, petrochemical, railway, automobile, mining, construction machinery, and other industries in China and abroad.¹⁶³²

Additional civilian products are used in hydraulic and lubrication systems in construction machinery, air compressors, wind power generation, medical treatment, and high-speed rail. The products are exported to Europe, America, Oceania and Asia-Pacific.¹⁶³³

AVIC Heavy Machinery originated from the state-owned Jinjiang Machinery Factory [金江机械厂], which was established in 1965 as part of Third Front mobilization. Early personnel came from Nanjing Jincheng Machinery Factory [南京金城机械厂], Zhuzhou 331 Factory [株洲331厂], and Xi'an 430 Factory [西安430厂]. In 1996, this factory was partially reorganized, establishing the Guizhou Liyuan Hydraulic Co., Ltd. [贵州力源液压股份有限公司], which in 2009 changed its name to AVIC Heavy Machinery Co., Ltd.¹⁶³⁴

Notable Collaborations:

International:

- AVIC Heavy Machinery claims to be a forging supplier for Boeing, Airbus, Safran, Rolls-Royce, GE, ITP, IHI, Mettis, and other well-known aviation manufacturers¹⁶³⁵

Known Subsidiaries:

- Guizhou Jinjiang Aviation Hydraulic Co., Ltd. [贵州金江航空液压有限责任公司]
- Jiangxi Jinghang Aviation Forging Co., Ltd. [江西景航航空锻造有限公司]
- Guizhou Yonghong Aviation Machinery Co., Ltd. [贵州永红航空机械有限责任公司]
- China Aerospace Science and Technology Co., Ltd. [中航天地激光科技有限公司]
- AVIC Metal Materials Physical and Chemical Testing Technology Co., Ltd. [中航金属材料理化检测科技有限公司]
- Guizhou Anda Aviation Forging Co., Ltd. [贵州安大航空锻造有限公司]
- AVIC Excellence Forging (Wuxi) Co., Ltd. [中航卓越锻造(无锡)有限公司]
- Hanzhong Qunfeng Machinery Manufacturing Co., Ltd. [汉中群峰机械制造有限公司]
- Guizhou Anji Aviation Precision Casting Co., Ltd. [贵州安吉航空精密铸造有限责任公司]
- AVIC Liyuan Hydraulic Co., Ltd. [中航力源液压股份有限公司]
- Shaanxi Hongyuan Aviation Forging Co., Ltd. [陕西宏远航空锻造有限责任公司]¹⁶³⁶
 - Present on U.S. Department of Commerce Entity List¹⁶³⁷

Key Personnel:

- Ji Suchun [姬苏春]: Party Secretary; Chairman
- Ran Xing [冉兴]: Deputy Party Secretary; CEO¹⁶³⁸

Equipment/Facilities:

- 201 R&D Processing Comprehensive Plant [201 号研发加工综合厂房]
- Advanced Forging Base¹⁶³⁹

Inclusion on U.S. Entity Lists:

- Present on U.S. Office of Foreign Asset Control Sanctions List¹⁶⁴⁰
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁶⁴¹

14.10. AVIC Special Vehicle Research Institute [中国特种飞行器研究所]

Aliases and Former Names:

- 605 Institute [605 所]

Notable Products/Services: seaplanes, ground-effect aircraft, aerostats, other special aircraft

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.¹⁶⁴²

Address: 8 Hangkong Road, Jingmen City, Hubei Province [湖北省荆门市航空路 8 号]¹⁶⁴³

Website: <http://www.svri.avic.com/> (apparently defunct)

Archived: <https://web.archive.org/web/20201206014956/http://www.svri.avic.com/>

Key Data:

- Established: 1961
- Assets: total assets of 150 million RMB in total assets
- Floor space: 2 million sqm¹⁶⁴⁴

Overview:

The China Special Aircraft Research Institute (SVRI/SVI) [中国特种飞行器研究所] is China's only research and design institute for special aircraft such as seaplanes, ground-effect aircraft, and aerostats.¹⁶⁴⁵ It was founded in 1961 and moved to Jingmen, Hubei in 1969.¹⁶⁴⁶

Notable Applications:

- Involved in development of AG600 amphibious aircraft, HO300 light amphibious aircraft, AG50 light sports aircraft, other floating aircraft¹⁶⁴⁷
- Developed China's first tethered balloon information platform and its first generation of stratospheric airship platform test boats¹⁶⁴⁸
- FK series of remote controlled airships
- SH5B Forest Fire Fighting Aircraft
- A2C Ultralight Seaplane
- DXF100 Ground Effect Aircraft
- Other helium-filled manned airships¹⁶⁴⁹

Notable Collaborations:

International:

- In July 2015, signed development agreement with French aerostat company Flying Whales¹⁶⁵⁰

Known Subsidiaries:¹⁶⁵¹

- Wuhan AVIC Tongfei Special Vehicle Co., Ltd. [武汉中航通飞特种飞行器有限公司]

Key Personnel:

- Zhang Mingwen [张明文]: Head [院所领导] (position not stated, presumably director)

- Liao Shengzhi [廖圣智]: Deputy Director
- Wang Zhenglong [王正龙]: Deputy Director
- Sun Yongjun [孙勇军]: Deputy Director
- Fu Minghang [傅明航]¹⁶⁵²

Equipment/Facilities:

- Hubei Provincial Enterprise Technology Center [湖北省企业技术中心]
- Hubei Provincial Engineering Laboratory [湖北省工程实验室]¹⁶⁵³
- Two special key laboratories for aviation science and technology, high-speed hydrodynamics, structural corrosion protection and control
- Professional aircraft test and verification platform
- Post-doctoral scientific research station

14.11. AVIC Tongfei North China Aircraft Industry Co., Ltd. [中航通飞华北飞机工业有限公司]

Aliases and Former Names:

- Factory 522 [522 厂]
- Shijiazhuang Aircraft Industry Co., Ltd. [石家庄飞机工业有限责任公司]
- AVIC Shijiazhuang Aircraft Manufacturing Plant [航空工业部石家庄飞机制造厂]
- Shijiazhuang Hongxing Machinery Factory [石家庄市红星机械厂]
- State-Owned North China Machinery Factory [国营华北机械厂]
- State-owned Factory 7055 [国营第七〇五五厂]¹⁶⁵⁴

Notable Products/Services: small and medium-sized civil aircraft¹⁶⁵⁵

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Corporate Ownership:

- China Aviation Industry General Aircraft Co., Ltd. [中航通用飞机有限责任公司] (53%)
- Beihang Investment Group Co., Ltd. [北航投资有限公司] (35%)
- AviChina Industry and Technology Co., Ltd. [中国航空科技工业股份有限公司] (12%)¹⁶⁵⁶

Address: No. 99 Hengjing Rd., Luancheng District, Shijiazhuang, Hebei Province [石家庄市栾城区衡井路 99 号]¹⁶⁵⁷

Website: <http://www.avicsaic.com>

Key Data:

- Established: 1970,¹⁶⁵⁸ current form September 2012¹⁶⁵⁹
- Personnel: over 3,000 employees, including over 1,000 technical and management personnel¹⁶⁶⁰

Overview:

AVIC Tongfei Huabei Aircraft Industry Co. (SAIC) produces small and medium-sized general-purpose aircraft (including the Y-5B), motorcycles, and agricultural equipment.¹⁶⁶¹

SAIC was originally established in 1970 as the Shijiazhuang City Star Machinery Plant under the Shijiazhuang Machinery Bureau. The company's current form was established in September 2012. It has three design institutes for airplanes, motorcycles, and light industrial machinery.¹⁶⁶² It has comprehensive cold and hot processing capabilities, as well as physical and chemical, metering, special design, flight test, and other test capabilities.

It is jointly funded by AVIC General Aircraft Co., Ltd., Hebei Aviation Investment Group Co., Ltd., and China Aviation Science and Technology Industry Co., Ltd..¹⁶⁶³

Notable Applications:

- Y-5B series aircraft
- Kitty Hawk 500 [小鹰 500] light aircraft
- Seagull 300 [海鸥 300] amphibious aircraft
- Cessna "Triumph" 208B aircraft
- Beechcraft Super King 350 aircraft
- Various industrial-grade UAVs¹⁶⁶⁴
- Dragonfly series ultra-light aircraft¹⁶⁶⁵

Notable Collaborations:

International:

- U.S. companies Cessna and Beechcraft¹⁶⁶⁶

Known Subsidiaries:¹⁶⁶⁷

- Cessna-AVIC Aircraft (Shijiazhuang) Co., Ltd. [石家庄中航塞斯纳飞机有限公司]¹⁶⁶⁸
- Shijiazhuang Aircraft Industry Co., Ltd. [石家庄飞机工业有限责任公司]¹⁶⁶⁹
- Shijiazhuang Zhonghang Mechanical and Electrical Equipment Manufacturing Co., Ltd. [石家庄中航机电装备制造有限公司]¹⁶⁷⁰

14.11.1. SHIJIAZHUANG ZHONGHANG MECHANICAL AND ELECTRICAL EQUIPMENT MANUFACTURING CO., LTD. [石家庄中航机电装备制造有限公司]

Aliases and Former Names:

- 中航机电

Notable Products/Services: special aviation equipment, electromechanical equipment, mining equipment¹⁶⁷¹

Immediate Parent Institution: AVIC Tongfei North China Aircraft Industry Co., Ltd.¹⁶⁷²

Address: No. 99, Hengjing Road, Luancheng District, Shijiazhuang City [石家庄市栾城区衡井路 99 号]¹⁶⁷³

Website: <http://www.sfsjz.com/>

Overview:

Shijiazhuang Zhonghang Electromechanical Equipment Manufacturing conducts research, development, production and sales of aviation special equipment and coal mine equipment. Its leading products include mining electromechanical equipment, non-standard equipment, new energy equipment, and other products.¹⁶⁷⁴

It is located in the Shijiazhuang General Aviation Industrial Park [石家庄通用航空产业园].¹⁶⁷⁵ It appears to be co-located with its parent, AVIC Tongfei.

14.11.1.1. AVIC UAV [中航无人机]1676

Aliases and Former Names:

- AVIC UAV [中航无人机]¹⁶⁷⁷

Notable Products/Services: UAVs

Immediate Parent Institution: Shijiazhuang Zhonghang Mechanical and Electrical Equipment Manufacturing Co., Ltd.¹⁶⁷⁸

Address: East Gate, AVIC Tongfei North China Company, Hongtai Street, Luancheng District, Shijiazhuang City, Hebei Province [河北省石家庄市栾城区宏泰大街中航通飞华北公司-东门]¹⁶⁷⁹

Website: <http://avicuav.com/>

Archived: <https://web.archive.org/web/20220704002741/http://avicuav.com/>

Key Data:

- Floor space: 727,333 sqm¹⁶⁸⁰

Overview:

AVIC UAV integrates R&D, production, manufacturing, and training of UAVs.¹⁶⁸¹ It produces the following types of UAVs: gas-powered helicopters, tethered drones, vertical take-off and landing (VTOL) fixed-wing UAVs, and police drones.¹⁶⁸² It also provides aerial services such as aerial photography, agriculture and forestry plant protection, land surveying, and power/transmission surveying.¹⁶⁸³

The company is authorized by the Civil Aviation Administration of China (CAA) and certified by the AOPA (Aircraft Owners and Pilots Association of China) as a professional drone training institution¹⁶⁸⁴ and serves as the aviation technology education center of the China AOPA.¹⁶⁸⁵

It appears to be co-located with AVIC Tongfei. The exact relation between AVIC UAV and Shijiazhuang Zhonghang Mechanical and Electrical Equipment Manufacturing is unclear; AVIC UAV's website lists Shijiazhuang Zhonghang as its name in some places, and previously listed itself as the latter's official website.¹⁶⁸⁶

This company is not to be confused with the other AVIC entity of the same (abbreviated) Chinese name - AVIC (Chengdu) UAS Co., Ltd. [中航（成都）无人机系统股份有限公司].

14.12. Tongfei Zhuhai Composites Technology Branch [通飞珠海复材科技分公司]

Aliases and Former Names:

- AVIC Composites Branch
- Zhuhai Composites Technology Branch [珠海复合材料科技分公司]

Notable Products/Services: composite parts¹⁶⁸⁷

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: AVIC Zhuhai Base Courtyard, No. 999 Jinhai Middle Road, Jinwan District, Zhuhai, Guangdong Province [广东省珠海市金湾区金海中路 999 号航空工业通飞珠海基地院内]¹⁶⁸⁸

Overview:

The Tongfei Zhuhai Composites Technology Branch of CAIGA conducts R&D of composite parts for military and civilian use. It oversees the Zhuhai General Aircraft Composite Molding Engineering Technology Research and Development Center.¹⁶⁸⁹

14.13. Zhuhai General Aviation R&D and Manufacturing Base [珠海通用航空研发制造基地]

Aliases and Former Names:

- AVIC General Aircraft Zhuhai Base [航空工业通飞珠海基地]

Notable Products/Services: fixed-wing general-purpose aircraft, surface aircraft¹⁶⁹⁰

Immediate Parent Institution: China Aviation Industry General Aircraft Co., Ltd.

Address: Zhuhai Aviation Industrial Park Airport Core Area [珠海航空产业园区机场核心区]¹⁶⁹¹

Key Data:

- Established: 2009/2010
- Initial project investment: 10 billion RMB¹⁶⁹²
- Personnel: over 1,000 employees¹⁶⁹³

Overview:

The Zhuhai General Aviation R&D and Manufacturing Base is the main manufacturing base for CAIGA. It is mainly responsible for R&D, assembly, and flight testing of fixed-wing general-purpose aircraft and surface aircraft.

It has been involved in development of the fire-fighting/water rescue amphibious aircraft AG600, the AG300 single-engine turboprop light business jet, the HO300 light amphibious aircraft, and the single-engine piston light series aircraft SR20/SR22, among others. It has undertaken more than 60 scientific research projects for the government and military, covering all specializations in the general aviation industry chain.¹⁶⁹⁴

The Base began construction in 2009 and was operational by 2012.¹⁶⁹⁵ It is divided into three parts: final assembly and test flight, product delivery and customer service, and general aviation operation.¹⁶⁹⁶

Notable Applications:

- AG 300, AG600 aircraft
- HO300 light amphibious aircraft
- SR20, SR22 single-engine piston light series aircraft¹⁶⁹⁷
- LH-150 aircraft [“领航”150 飞机]
- Cirrus SF50 light jet¹⁶⁹⁸

Notable Collaborations:

- Signed a sales contract with Beidahuang General Aviation [北大荒通航] for 10 domestic Cirrus SR20 (G6) aircraft.¹⁶⁹⁹

Known Subsidiaries:

- 205 Assembly Plant of CAIGA Zhuhai Industrial Base [中航通用珠海产业基地 205 总装厂房]¹⁷⁰⁰

Key Personnel:

- Zhao Jingbo [赵静波]: CEO; Deputy Director of AG600 project¹⁷⁰¹
- Ma Jianming [马建明]: Assembly Center Director¹⁷⁰²
- Huang Lingcai [黄领才]: Chief designer of AG600 aircraft
- Cheng Zhihang [程志航]: Designer¹⁷⁰³

OTHER PRODUCTS AND SERVICES

In addition to its core aviation business, AVIC has its hand in multiple other industries, including finance, automobiles and auto parts, IT services, import-export, construction and engineering, commodities, logistics, and various consumer products. Many of these fall under AVIC International Holding Corporation, which is officially tasked with managing AVIC's overseas markets but has developed a highly diversified portfolio. This portfolio includes companies with military applications, such as AVIC Huadong Photo-electronics.

15. AVIC Asset Management Co. Ltd. [中航资产管理有限公司]

Notable Products/Services: asset management

Address: No. 67, Jiadaokou South Street, Dongcheng District, Beijing [北京市东城区交道口南大街 67 号]¹⁷⁰⁴

Website: <http://www.avicasset.com/index.html> or <http://中航资产.com>

Archived: <https://web.archive.org/web/20210518172511/http://www.avicasset.com/index.html>

Archived: <https://web.archive.org/web/20180808001751/http://中航资产.com/>

Overview:

AVIC Asset Management Corporation Ltd. (AVIC Assets) is primarily engaged in asset management. As of 2018, AVIC Assets directly managed 37 units, with total assets of more than 10 billion RMB and more than 18,000 employees. It mainly operates four business units: asset management, medical care, vocational education and others.¹⁷⁰⁵ The company was established in October 2013.

Known Subsidiaries:

- Aviation General Hospital [航空总医院]¹⁷⁰⁶
- AVIC No. 3201 Hospital [中航工业三二〇一医院]¹⁷⁰⁷
- AVIC Harbin 242 Hospital [中航工业哈尔滨二四二医院]¹⁷⁰⁸
- AVIC Guizhou No. 300 Hospital [中航工业贵航三〇〇医院]¹⁷⁰⁹
- AVIC Guizhou No. 302 Hospital [中航工业贵航三〇二医院]¹⁷¹⁰
- 363 Hospital [三六三医院]¹⁷¹¹ (possibly)
- AVIC Hunan Aviation Industry Bureau [中航工业湖南航空工业局]
- AVIC Shaanxi Assets Operation and Management Co., Ltd. [中航工业陕西资产经营管理有限公司]¹⁷¹²
- AVIC Sichuan Assets Operation and Management Co., Ltd. [中航工业四川资产经营管理有限公司]¹⁷¹³
- Shanghai Xinsheng Aviation Industry Investment and Development Co., Ltd. [上海欣盛航空工业投资发展有限公司]¹⁷¹⁴

- AVIC Shanghai Asset Operation and Management Co., Ltd. [中航工业上海资产经营管理有限公司]¹⁷¹⁵
- AVIC Guizhou Asset Operation and Management Co., Ltd. [中航工业贵州资产经营管理有限公司]¹⁷¹⁶
- AVIC Northern Asset Operation and Management (Beijing) Co., Ltd. [中航北方资产经营管理（北京）有限公司]¹⁷¹⁷
 - AVIC Kaixin Industrial Co., Ltd. [中航凯信实业有限公司]¹⁷¹⁸
- Kairui Overseas Company [凯瑞海外公司]
- AVIC 012 Base Technical School (Shaanxi Aviation Technician College) [中航工业 012 基地技工学校（陕西航空技师学院）]
- AVIC Guihang Advanced Technical School (Guizhou Aviation Industry Technician College) [中航工业贵航高级技工学校（贵州航空工业技师学院）]
- Shaanxi Aviation Vocational and Technical Institute [陕西航空职业技术学院]¹⁷¹⁹
- China National Civil Aircraft Development Co., Ltd. [中国民用飞机开发有限公司]¹⁷²⁰
- Beijing Hangxin Operation Management Co., Ltd. [北京航新运营管理有限公司]¹⁷²¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁷²²

15.1. Hunan Aviation Industry Bureau [湖南航空工业局]

Aliases and Former Names:

- 013 Base [013 基地] (former)¹⁷²³
- Aviation Industry Hunan Bureau [航空工业湖南局]

Notable Products/Services: management, supervision, coordination of Hunan's aviation industry¹⁷²⁴

Immediate Parent Institution: AVIC Asset Management Co., Ltd.

Address: No. 289, Laodong East Road, Yuhua District, Changsha, Hunan Province [湖南省长沙市雨花区劳动东路 289 号] (which used to be No. 2 Hangkong Road, Changsha [长沙市辖区航空路 2 号])¹⁷²⁵

Key Data:

- Established: 1965¹⁷²⁶

Overview:

The Hunan Aviation Industry Bureau performs the functions of management, supervision, coordination, and service of aviation industry enterprises and institutions in Hunan Province.¹⁷²⁷

Known Subsidiaries:

- AVIC Hunan Asset Management Co., Ltd. [中航工业湖南资产经营管理有限公司]¹⁷²⁸
- AVIC Landing Gear Advanced Manufacturing Corp. [中航飞机起落架有限责任公司] (possible former subsidiary)¹⁷²⁹

Key Personnel:

- Xu Jun [徐军]: Director¹⁷³⁰

16. AVIC Automotive Systems Holdings Co., Ltd. [中国航空汽车系统控股有限公司]

Aliases and Former Names:

- AVIC Automotive [中航工业汽车]
- China Aviation Automobile Industry Co., Ltd. [中国航空汽车工业有限公司]

Notable Products/Services: automobiles, engines, associated auto parts, mechanical and electrical products, industrial automation systems and equipment, metal materials, chemical products, rubber products

Immediate Parent Institution: AVIC¹⁷³¹

Corporate Ownership:

- AVIC [中国航空工业集团公司] (70.1%)
- China Guizhou Aviation Industry (Group) Co., Ltd. [中国贵州航空工业(集团)有限责任公司] (22.4%)
- Beijing Yizhuang International Automobile Investment Management Co., Ltd. [北京亦庄国际汽车投资管理有限公司] (7.4%)¹⁷³²

Address: 19th Floor, Building 1, No. 10, Middle Ronghua Road, Beijing Economic and Technological Development Zone, Beijing [北京市北京经济技术开发区荣华中路10号1幢19层]¹⁷³³

Website: <http://avicautomotive.avic.com/>

Archived: <https://web.archive.org/web/20210926223948/http://avicautomotive.avic.com/>

Key Data:

- Established: 1985 (original),¹⁷³⁴ 2010 (current form)¹⁷³⁵
- Capital: 491.5 million RMB in registered capital¹⁷³⁶

Overview:

AVIC Automotive Systems Holdings Co. designs and manufactures automobiles, engines, and associated parts. It also conducts work related to the development, service, and management of automobile-related projects, mechanical and electrical products, industrial automation systems and equipment, metal materials, chemical products (except hazardous chemicals), and rubber products. AVIC Automotive is invested in 3 companies.¹⁷³⁷

Known Subsidiaries:

- AVIC Guizhou Guihang Automotive Components Co., Ltd. [贵州贵航汽车零部件股份有限公司]
- Sichuan Chengfei Integration Technology Co., Ltd [四川成飞集成科技股份有限公司]
- Shanghai Aero Engine Manufacturing Co., Ltd. [上海航空发动机制造有限公司]
- Henniges Automotive / AVIC Henniges (Beijing) Investment Holding Co., Ltd. [中航瀚德(北京)投资控股有限公司/中航瀚德] (U.S. company)
- Pacific Century (Beijing) Auto Parts Co., Ltd. [太平洋世纪(北京)汽车零部件有限公司]
- Shijiazhuang Huayan [石家庄华燕]
- Shanghai Yaohua [上海耀华]¹⁷³⁸
- Pacific Century (Beijing) [太平洋世纪(北京)]
 - Nexteer Automotive [耐世特] (U.S. company)

Key Personnel:

- Lei Zili [雷自力]: Chairman; CE
- Zhou Chunguang [周春光]: Supervisor [监事]
- Hao Liping [郝力平]: Supervisor
- Yang Wenbing [杨文冰]: Supervisory Board Chairman [监事会主席]
- Wang Bo [王博]: Board Member
- Zheng Hao [郑浩]: Board Member
- Luo Linsi [罗霖斯]: Board Member
- Chen Changfu [陈昌富]: Board Member¹⁷³⁹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁷⁴⁰

16.1. AVIC Guizhou Guihang Automotive Components Co., Ltd. [贵州贵航汽车零部件股份有限公司]

Aliases and Former Names:

- Guihang [贵航股份]

Notable Products/Services: automotive components, military aviation products

Immediate Parent Institution: AVIC Automotive Systems Holding Co., Ltd.

Corporate Ownership:

- AVIC Automotive [中航工业汽车] (primary shareholder) (37.01%)¹⁷⁴¹
- China Guizhou Aviation Industry (Group) Co., Ltd. [中国贵州航空工业(集团)有限责任公司]
- Guiyang Qingchangzai Asset Management Co., Ltd. [贵阳市青常在资产管理有限公司]
- Guiyang Industrial and Commercial Investment Group Co., Ltd. [贵阳市工业投资有限公司]¹⁷⁴²

Address:

- No. 361, Pujiang Road, Xiaohe, Guiyang, Guizhou Province [贵州省贵阳市小河浦江路 361 号]
- No. 166, Zhujiang Road, National Economic and Technological Development Zone, Guiyang, Guizhou Province [贵州省贵阳市国家经济技术开发区珠江路 166 号]¹⁷⁴³

Website: <http://www.gzghgf.com/>

Key Data:

- Established: 1999
- Assets: 3.258 billion RMB in total assets
- Personnel: over 4,800 employees¹⁷⁴⁴

Overview:

Guizhou Guihang Automotive Components (GACO) produces automotive components.¹⁷⁴⁵ It also produces some aviation products which are used by the PLA Air Force and Navy.¹⁷⁴⁶

Guihang was founded in 1999 under the Guizhou Aircraft Industry Corporation [中国贵州航空工业(集团)有限责任公司], and listed on the stock market in 2001.¹⁷⁴⁷ The headquarters

is located in Guiyang, Guizhou Province, and its affiliated units are located in Guiyang and 3 other provinces and cities.

Known Subsidiaries:

- Guiyang Wanjiang Aviation Electromechanical Co., Ltd. [贵阳万江航空机电有限公司]
- Guizhou Huachang Company [贵州华昌公司]
- Guizhou Hongyang Seal Company [贵州红阳密封件公司]
- Guizhou Yonghong Radiator Company [贵州永红散热器公司]
- Shanghai Yonghong Auto Parts Co., Ltd. [上海永红汽车零部件有限公司]
- Guizhou Huayang Electric Co., Ltd. [贵州华阳电工有限公司]
- Guizhou Huayang Auto Parts Co., Ltd. [贵州华阳汽车零部件有限公司]
- Shanghai Hongyang [上海红阳]
- Guizhou Hongyang Machinery [贵州红阳机械]
- Guizhou Huayang Electric Appliance Co., Ltd. [贵州华阳电器公司]
- Guiyang Huake Electroplating Company [贵阳华科电镀公司]
- Tianjin Daqi [天津大起]¹⁷⁴⁸

Key Personnel:

- Yu Xianfeng [于险峰]: CEO
- Sun Dongyun [孙冬云]: Secretary of the Board¹⁷⁴⁹

Equipment/Facilities:

- Advanced production lines for rubber, plastic extrusion, composite extrusion, automotive hose production, automotive electrical switch production, radiator production, air filter production, automotive door and window glass lifters, wiper motors, wiper blades, etc.¹⁷⁵⁰

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁷⁵¹

16.2. AVIC Shanghai Aero Engine Manufacturing Co., Ltd. [中航工业上海航空发动机制造股份有限公司]

Aliases and Former Names:

- Shanghai Aviation Engine [上航发动机]

Notable Products/Services: car body structural parts, automotive molding and connecting, sheet metal stamping parts, welding assemblies

Immediate Parent Institution: AVIC Automotive Systems Holding Co., Ltd.

Address: No. 1058, Fulian Road, Baoshan District, Shanghai [上海市宝山区富联路 1058 号]¹⁷⁵²

Website: <http://www.shanghai-ae.com/>

Key Data:

- Established: 8 April 1997¹⁷⁵³
- Capital: 174.9 million RMB in registered capital (2019)¹⁷⁵⁴
- Floor space: 180,000 sqm, with a building area of 80,000 sqm¹⁷⁵⁵

Overview:

The Shanghai Aero Engine Manufacturing Co. develops and produces medium and high-grade automotive molding and connecting.¹⁷⁵⁶ It engages in the production of automobile body and sheet metal stamping parts, welding assemblies, and non-standard parts.¹⁷⁵⁷

The company was founded in July 1978, and incorporated in December 2004 as a joint-stock company. It was restructured into a limited liability company in April 2018. The company has six production bases and a technical center in Shanghai, Yantai, Shenyang, Wuhan, Chuzhou and Zhangjiakou.

Notable Applications:

- Participated in developing and producing the WS-8 engine of the Y-10 aircraft¹⁷⁵⁸

Notable Collaborations:

Domestic:

- SAIC General Motors Co., Ltd., SAIC Passenger Vehicle Branch, SAIC Volkswagen Co., Ltd., Geely Volvo Cars, and BMW Brilliance Automotive Co., Ltd.
- The company is the core supplier of SAIC GM and SAIC Passenger Vehicles.¹⁷⁵⁹

Known Subsidiaries:

- Holding subsidiaries in Yantai, Shandong, and Shenyang, respectively ¹⁷⁶⁰
- Zhangjiakou Branch of Shanghai Aero Engine Manufacturing Co., Ltd. [上海航空发动机制造有限公司张家口分公司]
- Shanghai Aero Engine Manufacturing Co., Ltd. Chuzhou Branch [上海航空发动机制造有限公司滁州分公司]
- Shanghai Aero-Engine Factory Staff Technical Association [上海航空发动机制造厂职工技术协会]¹⁷⁶¹

Key Personnel:

- Xu Yi [徐毅]: Chairman
- Li Ming [李鸣]: CEO
- Kong Lingfen [孔令芬]: Board Member
- Li Longquan [李龙泉]: Board Member
- Lu Lirui [鲁礼瑞]: Board Member¹⁷⁶²

16.3. Sichuan Chengfei Integration Technology Co., Ltd [四川成飞集成科技股份有限公司]

Aliases and Former Names:

- Chengfei Integration [成飞集成]

Notable Products/Services: tooling and moulds, aviation CNC parts, auto parts

Immediate Parent Institution: AVIC Automotive Systems Holding Co., Ltd.¹⁷⁶³

Address:

- No. 666-1, Section 2, Riyue Avenue, Qingyang District, Chengdu, Sichuan Province [四川省成都市日月大道 666 号附 1 号]¹⁷⁶⁴
- Innovation Service Center, No. 5 Gaopeng Avenue, Chengdu High-tech Zone, Chengdu, Sichuan Province [四川省成都高新区高朋大道 5 号 (创新服务中心)]¹⁷⁶⁵

Website: <http://www.cac-citc.com/> (apparently defunct)

Archived: <https://web.archive.org/web/20220530152709/http://www.cac-citc.com/>

Key Data:

- Established: 2000
- Capital: 359 million RMB in registered capital
- Assets: 3.3 billion RMB
- Personnel: 1,100 employees
- Floor space: 180,000 sqm¹⁷⁶⁶

Overview:

The Sichuan Chengfei Integration Technology Co. (CITC) designs, develops, and manufactures tooling and molds, including molds for outer covering parts such as side walls, roofs,

doors, and fenders of medium- and high-end cars, aviation CNC parts manufacturing, and auto parts stamping.¹⁷⁶⁷ CITC formerly also developed lithium batteries through its subsidiary, China Aviation Lithium Battery Co. (CALB).¹⁷⁶⁸ However, in 2018, CITC restructured its lithium battery assets and no longer holds a controlling stake in CALB.¹⁷⁶⁹

At its founding, CITC was co-sponsored by Chengdu Aircraft Industry (Group) Co., Ltd. and Chengdu Aviation Instrument Co., Ltd., Geely Group Co., Ltd., Nanjing University of Aeronautics and Astronautics, and Northwestern Polytechnical University.¹⁷⁷⁰ It was resubordinated to AVIC Automotive in 2019.¹⁷⁷¹

Known Subsidiaries:

- Anhui Chengfei Integration Ruihu Mould Co., Ltd. [安徽成飞集成瑞鹤模具有限公司]
- Sichuan Chengfei Integrated Automobile Mould Co., Ltd. [四川成飞集成汽车模具有限公司]
- Xindu Branch [新都分公司]¹⁷⁷²

Key Personnel:

- Shi Xiaoqing [石晓卿]: Chairman
- Huang Shaohu [黄绍浒]: CEO
- Cheng Yan [程雁]: Secretary of the Board¹⁷⁷³

Equipment/Facilities:

- 23 large-scale CNC gantry milling machines
- 7 five-axis linkage high-speed gantry milling machines
- 11 large-table presses
- 4 in-line mechanical presses
- 2,000-ton servo press¹⁷⁷⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁷⁷⁵

17. AVIC Digital Technology [金航数码科技有限责任公司]

Aliases and Former Names:

- AVIC IT Center [航空工业信息技术中心]

Address:

- Block E, Aviation Industry Building, No. 5 Courtyard, Shuguangxili, Chaoyang District, Beijing [北京市朝阳区曙光西里甲5号院航空工业大厦E座]

- Floor 10, Building 3, Phase 1, Emerging Industry Demonstration Building, No. 266, Guanghua North 5th Road, Qingyang District, Chengdu [成都市青羊区光华北五路 266 号新兴产业示范大厦 1 期 3 栋 10 层]
- Room 301, Qilai Building, 889 Yishan Road, Xuhui District, Shanghai [上海市徐汇区宜山路 889 号齐来大厦 301 室]
- Room 1101-1108, COFCO Building, No. 56-34, Huanghe North Street, Huanggu District, Shenyang [沈阳市皇姑区黄河北大街 56-34 号中粮大厦 1101-1108]
- Room 2807, Building B, Haixing City Plaza, No. 37, Keji Road, High-tech Zone, Xi'an City / Third Floor, Satellite Building, No. 70, Jinye Road, High-tech Zone, Xi'an [西安市高新区科技路 37 号海星城市广场 B 座 2807 室 / 西安市高新区锦业路 70 号卫星大厦三楼]
- Room 607, Block A, Century Europe and America Center, No. 228, Jingangshan Avenue, Qingyunpu District, Nanchang City [南昌市青云谱区井冈山大道 228 号世纪欧美中心 A 座 607 室]¹⁷⁷⁶

Website: <https://www.avic-digital.com/>

Archived: <https://web.archive.org/web/20220815013737/https://www.avic-digital.com/>

Overview:

AVIC Digital Technology Co. Ltd. is involved in management and IT consulting, systems engineering, integrated management, manufacturing, customer service, IT infrastructure, and information security. It also serves as AVIC's professional information technology support organization and appears to do support for many AVIC (subsidiary) websites. Headquartered in Beijing, with branches in Chengdu, Shanghai, Xi'an, Shenyang, and Nanchang, AVIC Digital has more than 1,000 employees.¹⁷⁷⁷

18. China National Aero-Technology Import & Export Corporation [中航技进出口有限责任公司]

Aliases and Former Names:

- China National Aviation Technology Import and Export Corporation [中国航空技术进出口总公司] (former)¹⁷⁷⁸

Notable Products/Services: import/export of aircraft, helicopters, UAVs, munitions, other equipment

Immediate Parent Institution: AVIC¹⁷⁷⁹

Corporate Ownership:

- AVIC [中国航空工业集团公司] (50%)¹⁷⁸⁰

- AVIC International [中国航空技术国际控股有限公司] (50%)¹⁷⁸¹

Address: Building 9, No. 15 Courtyard Ronghua S. Rd., Beijing EEZ, Beijing [北京市北京经济技术开发区荣华南路 15 号院 9 号楼]

Website: <https://www.catic.cn/cn/>

Archived: <https://web.archive.org/web/20220525125933/https://www.catic.cn/cn/>

Key Data:

- Established: Original 1979, current form May 2009¹⁷⁸²
- Items produced: has exported over 30 aircraft models, over 2,000 aircraft, and over 5,000 guided munitions¹⁷⁸³

Overview:

The China National Aero-Technology Import & Export Corporation (CATIC) is tasked with import and export of AVIC's military aviation products and technology. Exported products include fighter and transport aircraft, helicopters, UAVs, munitions, and other support equipment. CATIC is responsible for working with international customers to jointly develop products, such as the K-8 trainer aircraft, JF-17 combat aircraft, and the Wing Loong UAV.¹⁷⁸⁴

Notable Applications:

Exports numerous variants of the:

- JF-17, JF-31, JH-7, J-10 combat aircraft
- L-15, FTC-2000, K-8, XY-500, and CJ-6 trainer aircraft
- Y-9, Y8, Y-12 transport aircraft
- Z-19, Z-11, Z-10, Z-9, AC-311, AC-312, AC-352 helicopters
- Wing Loong 1 and Wing Loong 2, AR-500, AR-165, and WL-10 UAVs
- Horizon anti-UAV system [地平线反无人机系统]
- SD-10, PL-5, TY-90, TL-2, YJ-9, LS-6 missiles and munitions¹⁷⁸⁵

Notable Collaborations:

Domestic:

- 2020 cooperation agreement and scholarship program with Northwestern Polytechnical University, cultivating international talent to better export in accordance with Belt and Road Initiative¹⁷⁸⁶
- 2020 talent cultivation agreement and scholarship with Nanjing University of Aeronautics and Astronautics, including future joint training of international students¹⁷⁸⁷

International:

- Per CATIC's website, has representative offices in Bolivia, Ecuador, Venezuela, Russia, Egypt, Angola, Congo, Djibouti, Algeria, Ethiopia, Kenya, Mauritania, Morocco, Namibia, Tanzania, Zambia, Zimbabwe, Bangladesh, Cambodia, "Persian Gulf" region (possible oblique reference to Iran), Kazakhstan, Laos, Burma, Pakistan, Saudi Arabia, Sri Lanka, Thailand¹⁷⁸⁸
- Involved in Belt and Road Initiative, presumably exporting aviation and other products¹⁷⁸⁹
- Sold aircraft to the Air Forces and/or security services of Argentina and Peru¹⁷⁹⁰
- Sold two Y-8 transport aircraft to Myanmar Air Force in 2016, one of which crashed in 2017¹⁷⁹¹
- Jointly marketing JF-17 internationally with Pakistan¹⁷⁹²
- Sold the L-15 trainer aircraft to Zambia¹⁷⁹³
- As of 2017, CATIC was marketing its UAVs, including the Wing Loong 2, to Mexico¹⁷⁹⁴
- Active in Cote d'Ivoire¹⁷⁹⁵

Key Personnel:

- Sun Zhiwei [孙志伟]: Deputy CEO
- Gao Wei [高伟]: Assistant to CEO [总经理助理]¹⁷⁹⁶
- Tang Jianming [唐建明]: Party Committee Deputy Secretary
- Zhou Jianhua [周建华]: Product Department Director [产品部部长]
- Tang Xing [唐星]: Human Resources Department Director [人力资源部部长]
- Zhang Nannan [张囡囡]: After-Sales Support Division Director [售后支持部处处长]¹⁷⁹⁷

19. AVIC Industry-Finance Holdings Co., Ltd. [中航工业产融控股股份有限公司]

Aliases and Former Names:

- AVIC Industry and Finance [中航产融]
- AVIC Capital Co., Ltd. [中航资本控股股份有限公司] (former name, changed 2021)¹⁷⁹⁸
 - AVIC Capital [中航资本]¹⁷⁹⁹
 - AVIC Capital Holdings Co., Ltd.
- AVIC Investment Holdings Co., Ltd. [中航投资控股股份有限公司]¹⁸⁰⁰
 - AVIC Investment [中航投资]¹⁸⁰¹
- North Asia Group (former, changed in 2012) [北亚集团]¹⁸⁰²
 - Beiya Group
- China Aviation Investment Holding Company (CAIHC)

Notable Products/Services: financial services, industrial investments

Address: Floor 41, AVIC Capital Building, Building 2, District 4, Wangjing East Park, Chaoyang District, Beijing [北京市朝阳区望京东园四区 2 号楼中航资本大厦 41 层]¹⁸⁰³

Website: <https://www.avicindustry-finance.com> or <http://www.aviccapital.com/> (former) or <http://www.caihc.cn> (apparently defunct)

Archived: <https://web.archive.org/web/20210613045404/http://www.aviccapital.com/>

Overview:

AVIC Industry-Finance Holdings Co., Ltd. is a financial service platform and industrial investment platform for AVIC.¹⁸⁰⁴ It is AVIC's primary finance platform, integrating AVIC's financial assets, industrial funds, security companies, finance companies, leasing companies, trust companies, futures companies, and insurance companies under one roof. It participates in all major AVIC mergers and acquisitions and asset restructuring efforts. It has a diversified array of investments, including in new materials, new technologies, new energy, banking, and life insurance.¹⁸⁰⁵

In 2015, the company was investigated over the sale of certain shares from an AVIC subsidiary, AVIC Black Panther [中航黑豹], which was an illegal disproportionate reduction, and was later punished by the Securities Regulatory Commission. It has been cited for violations on multiple occasions.¹⁸⁰⁶

Known Subsidiaries: ¹⁸⁰⁷

- Whale Wallet - AVIC Internet Financial Service Platform [鲸钱包—中航系互联网金融服务平台]
- AVIC Securities Co., Ltd. [中航证券有限公司]
- AVIC Securities Investor Education Base [中航证券投资者教育基地]
- AVIC International Leasing Co., Ltd. [中航国际租赁有限公司]
- AVIC Trust Co., Ltd. [中航信托股份有限公司]
- AVIC Futures Co., Ltd. [中航期货有限公司]
- AVIC Anmeng Property Insurance Co., Ltd. [中航安盟财产保险有限公司]
- Has significant investments in:
 - Shenfei Civil Aircraft [沈飞民机]
 - Xi'an Aircraft Industry Group Company Ltd. [西飞集团]
 - AVIC International [中航国际]
 - Kaitian Electronics [凯天电子]

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁸⁰⁸

20. AVIC International Holding Corporation [中国航空技术国际控股有限公司]

Aliases and Former Names:

- AVIC INTL [中航国际]
- AVIC International [中国航空技术国际控股有限公司]

Notable Products/Services: international promotion of AVIC, services for the aviation, advanced manufacturing industries, overseas public projects¹⁸⁰⁹

Immediate Parent Institution: AVIC¹⁸¹⁰

Corporate Ownership:

- AVIC [中国航空工业集团公司] (91.13444%)
- AVIC CCB Aviation Industry Equity Investment (Tianjin) Co., Ltd. [中航建银航空产业股权投资（天津）有限公司] (8.86556%)¹⁸¹¹

Address: AVIC International Building, No. 18 Beichen E. Rd., Chaoyang District, Beijing 100101 [北京市朝阳区北辰东路 18 号中航国际大厦 100101]¹⁸¹²

Website: <https://www.avic-intl.cn/>

Archived: <https://web.archive.org/web/20221009004457/https://www.avic-intl.cn/>

Key Data:

- Established: originally 1979, reformed 2009¹⁸¹³
- Assets: 280 billion RMB in total assets
- Personnel: over 100,000 personnel¹⁸¹⁴

Overview:

AVIC International is tasked with developing international markets, expanding foreign investments, and developing foreign trade for China's aviation industry.¹⁸¹⁵ It primarily works internationally, with 160 overseas offices in 66 countries and regions, developing international markets for AVIC in the fields of aviation, trade and logistics, retail and high-end consumer goods, real estate and hotels, electronics and high-tech, and resource development.¹⁸¹⁶ It is currently engaged in four primary sectors: aviation, advanced manufacturing, overseas public projects, and services and trade.¹⁸¹⁷ In addition, it produces advanced displays, PCB interconnections, and precision chronographs.¹⁸¹⁸

The predecessor of AVIC International was established in January 1979. The current iteration of AVIC International was formed in May 2009 by merging AVIC Supply and Marketing Corporation [中航供销总公司] and Beijing Ruisai Technology Co. [北京瑞赛科技有限公司] with a previous iteration of CATIC (a new iteration of CATIC was in turn established).

The company has reportedly provided Russian state defense companies with fighter jet components during the war in Ukraine.¹⁸¹⁹

Notable Collaborations:

International:

- Manages a German subsidiary, Humboldt Wedag [德国洪堡公司], which specializes in cement manufacturing machinery¹⁸²⁰
- AVIC International does business in the following countries: Angola, Nigeria, Senegal, Mozambique, Côte d'Ivoire, Democratic Republic of the Congo, Congo (Brazzaville), Cameroon, Ghana, Gabon, Uganda, Zambia, Tanzania, South Sudan, Rwanda, Kenya, Zimbabwe, Egypt, South Africa, Ethiopia, Algeria, Ecuador, Bolivia, Costa Rica, Brazil, British Virgin Islands, Venezuela, Peru, Cuba, United States, Australia, Switzerland, Finland, Spain, Norway, Greece, Russia, Germany, United Kingdom, France, Fiji, Kyrgyzstan, Nepal, Jordan, Laos, Pakistan, Bangladesh, Indonesia, Tajikistan, Kazakhstan, Cambodia, Indonesia, Vietnam, Hong Kong, Iran, Singapore, Turkey, Thailand, Sri Lanka, Myanmar, Malaysia, Mongolia, Japan, Korea, United Arab Emirates¹⁸²¹
- Participates in Belt and Road Initiative (BRI) via international project planning, financing management, export of electromechanical products, turnkey overseas projects, and operation and maintenance services¹⁸²²
- Conducts BRI projects in Africa, Latin America, SE Asia, Middle East, and Central Asia, including for projects involving aviation infrastructure, water engineering, housing construction, cement, energy and power, rail transportation and vocational education¹⁸²³
- Signed a cooperation agreement at an unknown date with U.S. company Deloitte¹⁸²⁴

Known Subsidiaries:¹⁸²⁵

- AVIC International Supply Chain Technology Co., Ltd. [中航国际供应链科技有限公司]
- Shennan Circuits Co., Ltd. [深南电路有限公司]
- AVIC Huadong Photo-electronics Co. Ltd. [中航华东光电有限公司]
- AVIC International Simulation Technology Services Co., Ltd. [中航国际仿真科技服务有限公司]
- AVIC International Holdings (Zhuhai) Co., Ltd. [中航国际控股（珠海）有限公司]
- Continental Aviation Technology [大陆航空科技]
- AVIC Gold (Beijing) E-Commerce Co., Ltd. [中航金网（北京）电子商务有限公司]
- Tianma Microelectronics Co., Ltd. [天马微电子股份有限公司]
- Shenzhen Aero-Fasteners MFG Co., Ltd. [深圳航空标准件有限公司]
- AVIC International Economic and Trade Corporation [中航国际经贸公司]
- AVIC International Project Engineering Company [中航国际成套公司]
- AVIC International Beijing Co., Ltd. [中航国际北京公司]
- China National Aero-technology International Engineering Corporation [中国航空技术国际工程有限公司]
- AVIC Lutong Co. Ltd. [中航路通实业有限公司]

- AVIC Gongqing [江西中航共青城实业有限公司]
- AVIC International Hong Kong [中国国际香港]
- AVIC International Holdings [中航国际控股]
- AVIC Forestry Co., Ltd. [中航林业有限公司]
- Beijing Ruisai Technology Co., Ltd. [北京瑞赛科技]
- AVIC International Steel Trading Co., Ltd. [中航国际钢贸公司]
- China Aviation Technology Hangzhou Co., Ltd. [中国航空技术杭州有限公司]
- AVIC International Mineral Resources Co., Ltd. [中航国际矿产资源公司]
- FIYTA Precision Technology Co., Ltd. [飞亚达精密科技股份有限公司]
- Rainbow Digital Commercial Co., Ltd. [天虹数科商业股份有限公司]
 - Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁸²⁶
- AVIC INTL Shenzhen (unclear if still exists)
- International Cooperation and Development Division [国际合作发展事业部]
- Aviation Operation Support Division [航空运营支持事业部]
- AVIC International Aero-Development Corporation [中航国际航空发展有限公司 (中航国际航发)] (AVICADE)
 - An exporter and aviation services provider, it claims to have worked with Boeing, Airbus, GE, Rolls-Royce, and to have been involved in AVIC's purchases of Spain's Aritex and the UK's AIM Altitude and Thomason Aero Seating.¹⁸²⁷
 - Subsidiary: AVIC International Flight Training Academy (AIFA) [艾维国际飞行学院/南航艾维国际飞行学院/南航艾维国际飞行学院（南京）有限公司]¹⁸²⁸
 - Located in South Africa, it is affiliated with a network (Test Flying Academy of South Africa / TFASA) that has hired former Western military pilots to train PLA aviators.¹⁸²⁹
 - Present on Department of Commerce Entity List¹⁸³⁰

Key Personnel:

- Lai Weixuan [赖伟宣]: Chairman¹⁸³¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁸³²
- Present on U.S. Department of Commerce Military End-User List¹⁸³³
- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁸³⁴

20.1. Beijing Ruisai Technology Co., Ltd. [北京瑞赛科技]

Notable Products/Services: asset management, real estate development

Immediate Parent Institution: AVIC International Holding Corporation

Address: No. 126, Jianguo Road, Chaoyang District, Beijing [北京市朝阳区建国路 126 号]¹⁸³⁵

Website: <http://www.raisescience.cn/index.php> ;
https://web.archive.org/web/20160913230623if_/http://www.raisescience.cn/index.php

Overview:

Beijing Ruisai Technology works in asset management, real estate development, property management, and hotel operation as the main business.¹⁸³⁶

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁸³⁷

20.2. China Aviation International Simulation Technology Services Co., Ltd. [中航国际仿真科技服务有限公司]

Aliases and Former Names:

- China Aviation International Simulation Technology Services Co., Ltd. [中航国际仿真科技服务有限公司]
- China Aviation International Simulation Technology Co. [中航国际仿真科技公司]
- AVIC Simulation [中航仿真]¹⁸³⁸

Notable Products/Services: flight simulation technology, simulators for UAVs, ships, rail transit¹⁸³⁹

Immediate Parent Institution: AVIC International Holding Corporation

Corporate Ownership:

- AVIC International Holding Corporation [中国航空技术国际控股有限公司] (60%)
- Shanghai Zhuoni Simulation Technology [上海卓拟仿真技术有限公司] (25%)
- Shanghai Hongni Technology [上海鸿倪科技有限公司] (15%)¹⁸⁴⁰

Address:

- Room 1001, Building 2, No. 510, Gutai Road, Baoshan District, Shanghai [上海市宝山区顾太路 510 号 2 幢-1001]¹⁸⁴¹
- 5th Floor, Hangfei Building, No. 333, Longteng Road, Songjiang District, Shanghai [上海市松江区龙腾路 333 号航飞楼 5 层]¹⁸⁴²

Website: <http://avic-sim.com/>

Archived: <https://web.archive.org/web/20210119212039/http://avic-sim.com/>

Key Data:

- Established: 2016¹⁸⁴³
- Capital: 100 million RMB in registered capital (at establishment)¹⁸⁴⁴
- Personnel: under 50 employees¹⁸⁴⁵

Overview:

AVIC International Simulation Technology specializes in the field of flight simulation, and is also expanding into simulation for drones, ships, and rail transit.¹⁸⁴⁶ Its business scope includes simulation products in the field of rail transit simulation technology, aviation equipment parts, electronic fire control accessories, electronic equipment, instrumentation, and processing and sales of forgings and aviation industry equipment.¹⁸⁴⁷

The company was established in Shanghai in 2016. It has an R&D base in Shanghai and a production and assembly base in Harbin.¹⁸⁴⁸ The latter was established in 2019 in the Cultural Industry Park of Harbin Normal University.¹⁸⁴⁹

Notable Applications:

- 737-800 aircraft full-motion simulator¹⁸⁵⁰

Key Personnel:

- Xu Bo [徐波]: Chairman; Branch Party Secretary
- Xie Donglai [谢东来]: CEO
- Chen Xi [陈曦]: Deputy CEO
- Ma Zhonghao [马仲豪]: Deputy CEO
- Li Qifeng [李其峰]: Deputy CEO
- Zhang Shuchun [张树春]: Deputy CEO¹⁸⁵¹
- Ma Yaoning [马耀宁]: Chief Accountant¹⁸⁵²
- Liu Yu [刘宇]: Executive Deputy CEO¹⁸⁵³

Equipment/Facilities:

- R&D base (Shanghai)
- Production and assembly center (Harbin)¹⁸⁵⁴

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Commerce Entity List¹⁸⁵⁵

20.3. China Aviation Technology Hangzhou Co., Ltd. [中国航空技术杭州有限公司]

Aliases and Former Names:

- AVIC International Hangzhou Company [中航国际杭州公司]

Notable Products/Services: industrial equipment contracting, investments and financing

Immediate Parent Institution: AVIC International Holding Corporation

Address: 15A, Tianji Building, No. 181, Tianmushan Road, Hangzhou, Zhejiang Province [浙江省杭州市天目山路 181 号天际大厦 15A]¹⁸⁵⁶

Website: <https://www.intl-hz.avic.com/> ;
<https://web.archive.org/web/20221201094414/https://www.intl-hz.avic.com/>

Key Data:

- Established: 1993¹⁸⁵⁷

Overview:

China Aviation Technology Hangzhou works in international EPC contracting for equipment such as air separation plants, LNG plants, hydrogen production plants, power stations, and seawater desalination plants. It also conducts international high-tech investment and financing, export of special vehicles and accessories, metal materials, new energy products, machinery equipment, and light industrial products, and imports laboratory equipment for chemical production and pharmaceutical manufacturing.¹⁸⁵⁸

20.4. China National Aero-technology International Engineering Corporation [中国航空技术国际工程有限公司]

Aliases and Former Names:

- China Aviation Technology International Engineering Co., Ltd. [中国航空技术国际工程有限公司]
- AVIC International Engineering Company [中航国际工程公司]

Notable Products/Services: engineering services, overseas investment and trade

Immediate Parent Institution: AVIC International Holding Corporation

Address: Floor 6, Floor 19-20, AVIC International Building, No. 18 Beichen East Road, Chaoyang District, Beijing [北京朝阳区北辰东路 18 号中航国际大厦 6 层、19-20 层]¹⁸⁵⁹

Website: <https://www.intl-gc.avic.com> ;

Archived: <https://web.archive.org/web/20221127005715/https://www.intl-gc.avic.com/main/index/index.html>

Key Data:

- Established: 1980¹⁸⁶⁰

Overview:

China Aviation Technology International Engineering (AVIC-ENG) primarily works in aviation infrastructure. Its business covers international engineering general contracting, overseas investment, domestic engineering, trade, etc. It carries out international engineering business around the world, mainly in the Middle East, East Africa, South Asia and other countries, and has established branches or wholly-owned subsidiaries in many countries.¹⁸⁶¹

Known Subsidiaries:

- AVIC-ENG Airport Engineering Co. Ltd. [中航赛博(北京)机场建设有限公司]
- AVIC Airport Construction Co. Ltd. [中航凯迪恩机场工程有限公司]
- Branch companies in: Tianjin, Hebei, Henan, Dalian, Xi'an, Chongqing, Guangdong, Shenyang, Sichuan, Jiangsu, Hunan, Hubei, Jiangxi, Shanghai, North China, East China, Yunnan, Fujian, Central Plains, Guizhou
- International branch companies in: Sri Lanka, Nepal, Malaysia, Philippines, Laos, Cambodia, UAE, Qatar, Kenya, Algeria, Tanzania, Ethiopia, Uganda, Rwanda, South Sudan¹⁸⁶²

20.5. Continental Aerospace Technologies [大陆航空科技控股有限公司]

Aliases and Former Names:

- Continental Motors (former)
- Continental Motors Group [大陆发动机集团公司] (former)

Notable Products/Services: aircraft piston engines

Immediate Parent Institution: AVIC International Holding Corporation¹⁸⁶³

Address:

- Room 1313, AVIC-Intl Plaza, 18, Beichendong Street, Beijing, China (same building as AVIC International)¹⁸⁶⁴
- Room 5021, Beijing International Convention Center NO.8 Beichen East Road, Beijing, 100101, China¹⁸⁶⁵

Website: <https://www.continental.aero/> or <http://www.cath.com.hk/> or

<https://www.irasia.com/listco/hk/cath/>

Archived: <https://web.archive.org/web/20190517103552/http://continentalmotors.com.cn/>

Archived: <https://web.archive.org/web/20211220104049/http://www.continentaldiesel.com/typo3/index.php?id=2&L=1>

Overview:

Continental Aerospace Technologies primarily manufactures aircraft piston engines. It has produced the A-70 radial engine, the engines for the Voyager aircraft, and the horizontally opposed cylinder. They use a Full Authority Electronic Controls (FADEC) and service system for the piston powered general aviation aircraft.¹⁸⁶⁶

The company began as Continental Motors, an American company acquired by AVIC International, which then added on a German acquisition – Continental Aerospace Technologies GmbH (formerly Technify Motors, and Thielert Aircraft Engines GmbH) – and a Chinese branch (Continental Motors Beijing Inc. [大陆发动机（北京）有限责任公司]). It has also acquired several other American general aviation companies. The group may have previously been known as AVIC International (Hong Kong) Group Co., Ltd. [中航國際（香港）集團有限公司].

Notable Applications:

- A-70 radial engine
- Voyager aircraft engine¹⁸⁶⁷

20.6. FIYTA Precision Technology Co., Ltd. [飞亚达精密科技股份有限公司]

Aliases and Former Names:

- Shenzhen Fiyta (Group) Co., Ltd. [深圳市飞亚达(集团)股份有限公司] (former)
- Fiyta Holdings Co., Ltd. [飞亚达(集团)股份有限公司] (former)

Notable Products/Services: watches and timekeeping devices

Immediate Parent Institution: AVIC International Holding Corporation¹⁸⁶⁸

Corporate Ownership: AVIC International Holding Corporation [中国航空技术国际控股有限公司] (38.07%)¹⁸⁶⁹

Address: 20/F, FIYTA Hi-tech Building, Gao-xin Road South, Nanshan District, Shenzhen [深圳市南山区高新南一道飞亚达科技大厦 20 楼]¹⁸⁷⁰

Website: <http://www.fiytagroup.com> or <http://www.fiyta.com.cn/>

Key Data:

- Established: 1987¹⁸⁷¹
- Capital: 426 million RMB in registered capital¹⁸⁷²
- Personnel: 134 employees¹⁸⁷³
- Floor space: total production area of 6,000 sqm¹⁸⁷⁴

Overview:

FIYTA Precision Technology is a leading watch brand in China and has provided space-functional watches for China's manned spaceflight missions. It arose from its predecessor, Flydart Watch Industry Co., Ltd [深圳飞达表业有限公司], which was established in 1987. In 1993, the company changed its name to Shenzhen FIYTA Holdings Limited [深圳市飞亚达（集团）股份有限公司] and was listed on the Shenzhen Stock Exchange. In 1994, it established its retail brand, which was named Harmony World Watch Center [亨吉利世界名表中心] in 1997. At the end of 2019, the company officially changed its name to FIYTA Precision Technology Co., Ltd.¹⁸⁷⁵ Today, the brand is active in more than 30 countries and regions in Southeast Asia, the Middle East, Europe and the Americas. Fiyta has over 3000 retail stores in China.¹⁸⁷⁶

Notable Applications:

- Shenzhou VI smart watch¹⁸⁷⁷

Known Subsidiaries:

- Shenzhen FIYTA Technology Development Co., Ltd. [深圳市飞亚达科技发展有限公司]¹⁸⁷⁸

Key Personnel:

- Zhang Xuhua [张旭华]: Chairman; Party Secretary¹⁸⁷⁹
- Pan Bo [潘波]: Deputy Party Secretary; CEO¹⁸⁸⁰
- Chen Zhuo [陈卓]: Secretary of the Board¹⁸⁸¹

Equipment/Facilities:

- FIYTA Technology Building (Nanshan District, Shenzhen)
- FIYTA Building (Futian District, Shenzhen)
- Shenyang 1928 Building (Heping District, Shenyang)

- Xi' an FIYTA Building (Beilin District, Xi' an)
- FIYTA Timepiece Building (Guangming New Area, Shenzhen)¹⁸⁸²

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁸⁸³

20.7. AVIC Forestry Co., Ltd. [中航林业有限公司]

Notable Products/Services: forest resource development

Immediate Parent Institution: AVIC International Holding Corporation

Address: General Department 2207, 22nd Floor, Huaxin International Business Building, No. 28 Changjiang Road, Yantai Economic and Technological Development Zone, Yantai, Shandong Province [山东省烟台市烟台经济技术开发区长江路 28 号华新国际商务大厦 22 层 2207]¹⁸⁸⁴

Website: <http://www.avic-forestry.com> ;
<https://web.archive.org/web/20220401065011/http://www.avic-forestry.com/index.html>

Key Data:

- Established: July 2011

Overview:

AVIC Forestry works in forest resource development, logging, processing, transportation, sales, park construction and investment promotion.¹⁸⁸⁵

20.8. AVIC Gold (Beijing) E-Commerce Co., Ltd. [中航金网（北京）电子商务有限公司]

Aliases and Former Names:

- AVIC Gold Network [中航金网]
- AVIC International Gold Network Company [中航国际金网公司]
- eCATIC

Notable Products/Services: e-commerce, web applications

Immediate Parent Institution: AVIC International Holding Corporation

Address: Floor 8, Building L1, AVIC International Plaza, No. 13 Ronghua South Road, Daxing District, Beijing [北京市大兴区荣华南路 13 号中航国际广场 L1 号楼 8 层]¹⁸⁸⁶

Website: <http://avicnet.cn/>

Archived: <https://web.archive.org/web/20220524220348/http://avicnet.cn/>

Key Data:

- Established: 29 April 2005¹⁸⁸⁷

Overview:

AVIC Gold (Beijing) Electronic Commerce Co. (eCATIC) is responsible for the promotion of e-commerce applications for AVIC-affiliated enterprises, and the construction and maintenance of the China Aviation Technology Import and Export Corporation's e-commerce platform.¹⁸⁸⁸ The company appears to do support work for many AVIC subsidiary websites.

20.9. AVIC Gongqing [江西中航共青城实业有限公司]

Aliases and Former Names:

- Jiangxi AVIC Gongqingcheng Industrial Co., Ltd. [江西中航共青城实业有限公司]

Notable Products/Services: industrial investment, general aviation development

Immediate Parent Institution: AVIC International Holding Corporation

Address: AVIC Office Building, Fuhua Avenue, Gongqing City, Jiujiang, Jiangxi Province, China [中国江西省九江市共青城市富华大道中航办公楼]¹⁸⁸⁹

Website: <http://avicgq.com/company.asp?id=3> ;

<https://web.archive.org/web/20130807232830/http://avicgq.com/company.asp?id=3>

Overview:

Jiangxi AVIC Gongqingcheng Industrial Co. (AVIC Gongqing) works in industrial investment, cultural industry development, general aviation development, and tourism solicitation.¹⁸⁹⁰ It is a comprehensive investment company jointly funded by China Aviation Technology International Holdings Co., Ltd. and China Aviation Technology Shenzhen Co., Ltd.

20.10. AVIC Huadong Photo-electronics Co. Ltd. [中航华东光电有限公司]

Aliases and Former Names:

- AVIC Huadong Photoelectric Co., Ltd.
- 中航华东光电

Notable Products/Services: special military display technology¹⁸⁹¹

Immediate Parent Institution: AVIC International Holding Corporation¹⁸⁹²

Corporate Ownership:

- AVIC International Holding Corporation [中国航空技术国际控股有限公司]¹⁸⁹³
- AVIC International Shenzhen [中国航空技术国际控股有限公司深圳] (51%)
- Wuhu Dechang Investment Partners [芜湖市德昌投资合伙企业] (30%)
- Wuhu Huahang Investment Management Co., Ltd. [芜湖市华航投资管理有限公司] (8%)
- Individual investors¹⁸⁹⁴

Address: No. 46, Tianjingshan Road, High-tech Industrial Development Zone, Wuhu, Anhui Province [安徽省芜湖市高新技术产业开发区天井山路 46 号]¹⁸⁹⁵

Website: <http://www.avic-opto.com/>

Archived: <https://web.archive.org/web/20190627203159/http://www.avic-opto.com/>

Key Data:

- Established: 2009¹⁸⁹⁶
- Capital: 200 million RMB in registered capital (at establishment)
- Personnel: between 501-1000 employees¹⁸⁹⁷
- Floor space: 51,260 sqm¹⁸⁹⁸

Overview:

AVIC Huadong Optoelectronics develops and produces special displays. It provides special display products to almost all PRC military aircraft as well as warship-mounted, vehicle-mounted, and artillery-mounted displays.¹⁸⁹⁹ These include 3-D displays, voice command recognition systems, human-machine interactive devices, helmet-mounted displays, and space vehicle displays.¹⁹⁰⁰

The company was established in 2009 by China Aviation Technology Shenzhen Co., Ltd. [中国航空技术深圳有限公司] and Anhui East China Optoelectronics Technology Research Institute [安徽华东光电技术研究所].¹⁹⁰¹

Notable Applications:

- TK-31 helmet (with mounted display), possibly used by PLAAF J-20 combat aircraft

Notable Collaborations:

- Hefei University of Technology [合肥工业大学]
- University of Science and Technology of China [中国科学技术大学]
- Harbin Institute of Technology [哈尔滨工业大学]

- Anhui Engineering University [安徽工程大学]
- Other universities¹⁹⁰²

Known Subsidiaries:

- AVIC Huadong Photo-Electronic (Shanghai) Co., Ltd. [中航华东光电(上海)有限公司] (possibly also known as “AVIC Huadong Optoelectronics Co., Ltd.” or “Shanghai AVIC Opto Electronics Co., Ltd.”)¹⁹⁰³

Key Personnel:

- You Lei [由镭]: Chairman
- Xiang Yan [向艳]: CEO¹⁹⁰⁴

20.11. AVIC International Beijing Co. Ltd. [中国航空技术北京有限公司]

Aliases and Former Names:

- AVIC International Beijing
- China Aviation Technology Beijing Co., Ltd. [中国航空技术北京有限公司]
- AVIC International Beijing Company [中航国际北京公司]

Notable Products/Services: industrial production equipment, complete production lines, and manufacturing technology for civil aviation products

Immediate Parent Institution: AVIC International [中国航空技术国际控股有限公司]

Address:

- China Aviation Technology Building, No. 18 Beichen East Road, Chaoyang District, Beijing [北京市朝阳区北辰东路18号中航技大厦]¹⁹⁰⁵
- Floor 10-15, L1 Building, AVIC International Plaza, No. 13 Ronghua South Road, Yizhuang Economic and Technological Development Zone, Beijing [北京市亦庄经济技术开发区荣华南路13号中航国际广场L1楼10-15层]¹⁹⁰⁶

Website: <https://www.intl-bj.avic.com/>

Overview:

China Aviation Technology Beijing is engaged in import and export, industrial production equipment, and manufacturing technology for civil aviation products. It also carries out a wide range of projects including cement engineering, petrochemical engineering, electromechanical engineering, and import & export of heavy equipment.¹⁹⁰⁷

Known Subsidiaries:

- Humboldt Wedag Inc. (德国洪堡公司)
- KHD Humboldt Wedag International AG
- KHD Humboldt Wedag Machinery Equipment (Beijing) Co. Ltd.
- Humboldt Wedag India Private Ltd.
- KHD Humboldt Engineering 000
- ZAB Zementanlagenbau GmbH
- AVIC International Kairong Co. Ltd. (HK) [中航国际凯融有限公司]
- Max Glory Industries Ltd. (HK) [中航国际万荣有限公司]
- Beijing Kaichang Technical and Trading Development Co. Ltd. [北京凯昌技工贸发展有限责任公司]
- Beijing Kaibao Cleaning Equipment Co. Ltd. [北京凯堡清洁设备有限公司]
- AVIC International Beijing East Africa [中航国际北京东非有限公司]
- T.F.T. Tools, Inc. (U.S.A.)
- AVIC Sudamericana S.A. [秘鲁公司]
- AVIC Cement Sdn. Bhd (Malaysia) [中航水泥马来西亚公司]
- AVIC International Beijing, C.A. (Venezuela) [中航国际北京维纳瑞拉公司]¹⁹⁰⁸

20.12. AVIC International Holdings Ltd. [中航国际控股股份有限公司]**Aliases and Former Names:**

- CATIC Shenzhen Holdings Limited (former)

Immediate Parent Institution: AVIC International Holding Corporation

Address: 39th Floor, AVIC Center Building, No. 1018 Huafu Road, Futian District, Shenzhen, Guangdong Province [广东省深圳市福田区华富路 1018 号中航中心大厦 39 楼]¹⁹⁰⁹

Website: www.avic161.com (apparently defunct)

Key Data:

- Established: September 1997¹⁹¹⁰

Overview:

AVIC International Holdings was established by China Aviation Technology Import and Export Shenzhen Corporation (CATIC Shenzhen) and was listed on the Hong Kong Stock Exchange on September 29, 1997. As a diversified strategic investment holding company, the company is mainly engaged in the fields of electronic components, high-end consumer goods,

commercial real estate, and resource businesses through its subsidiaries. As of 2019, it holds Tianma Microelectronics Co., Ltd., Shennan Circuits Co., Ltd., Shenzhen Fiyta (Group) Co., Ltd., Shenzhen AVIC Resources Co., Ltd. and other core companies, and holds a 22.35% stake in Shenzhen AVIC Real Estate Co., Ltd.¹⁹¹¹

Known Subsidiaries:

- Tianma Microelectronics Co., Ltd. [天马微电子股份有限公司]
- Shennan Circuits Co., Ltd. [深南电路有限公司]
- Shenzhen Fiyta (Group) Co., Ltd. [深圳市飞亚达(集团)股份有限公司]
- Shenzhen AVIC Resources Co., Ltd. [深圳中航资源有限公司]

20.13. AVIC International Holdings (Zhuhai) Co. Ltd. [中航国际控股（珠海）有限公司]

Aliases and Former Names:

- AVIC International Zhuhai [中航国际珠海]

Notable Products/Services: aviation parts supply chain management

Immediate Parent Institution: AVIC International Holding Corporation

Address: Zhuhai Free Trade Zone, Zhuhai, Guangdong Province [广东省珠海市珠海经济技术开发区]

Overview:

AVIC International Holdings (Zhuhai) (AVIC International Zhuhai) is an integrated management service platform for the aviation parts supply chain. It provides procurement, warehousing, and integrated supply services for aviation parts and other components.

Known Subsidiaries:

- ALIGN France [ALIGN 艾联法国]
- ALIGN China [ALIGN 艾联中国]
- Canada AVICAST [加拿大 AVICAST]
- Zhuhai AVIC Fast Aviation Technology Co., Ltd. [珠海中航法斯特航空技术有限公司]
- Zhuhai AVIC Aiviy Testing Technology Co., Ltd. [珠海中航艾维检测技术有限公司]¹⁹¹²

Notable Collaborations:*International:*

- Customers allegedly include Boeing, Airbus, Bombardier, UTC, GE, Honeywell¹⁹¹³

20.14. AVIC International Hong Kong [中航国际香港]**Aliases and Former Names:**

- AVIC International (Hong Kong) Group Co., Ltd. [中航國際（香港）集團有限公司]
- AVIC International Holding Hong Kong
- CATIC International Holdings Limited (former)

Immediate Parent Institution: AVIC International Holding Corporation

Address: None Found, likely Hong Kong [香港]

Website: <http://www.avic.com.hk/>

Archived:

<https://web.archive.org/web/20191030092113/http://www.irasia.com/listco/hk/avic/index.htm>

Key Data:

- Established: 1987

Overview:

AVIC International Hong Kong appears to be a simple financial/holding company. It may now be known as Continental Aerospace Technologies [大陆航空科技控股有限公司].

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁹¹⁴

20.15. AVIC International Mineral Resources Co., Ltd. [中航国际矿产资源公司]

Notable Products/Services: industrial trade, services, investment

Immediate Parent Institution: AVIC International Holding Corporation

Address: Floor 18-19, Huafeng International Business Building, No. 200, Xinye Road, Jianggan District, Hangzhou, Zhejiang Province [浙江省杭州市江干区新业路 200 号华峰国际商务大厦 18-19 楼]¹⁹¹⁵

Website: <http://www.avic-mr.com/about/index.html>

Archived: <https://web.archive.org/web/20220626143404/http://www.avic-mr.com/about/index.html>

Overview:

AVIC International Mineral Resources is mainly engaged in trade, services, and investment related to steel, minerals, and other bulk commodities. It has cooperated with well-known mines in Australia and Brazil. Its export business has gradually expanded to Indonesia, the Philippines, India, and other markets.¹⁹¹⁶

20.16. AVIC International Project Engineering Company [中航国际成套设备有限公司]

Aliases and Former Names:

- AVIC International Complete Equipment Co., Ltd. [中航国际成套设备有限公司]
- AVIC International Complete Company [中航国际成套公司]

Notable Products/Services: project planning, financing, management, and contracting

Immediate Parent Institution: AVIC International Holding Corporation

Address: 11th Floor, AVIC International, No. 18 Beichen East Road, Chaoyang District, Beijing [北京市朝阳区北辰东路 18 号中航国际 11 层] (same building as AVIC International)¹⁹¹⁷

Overview:

AVIC International Complete Equipment Co. is mainly engaged in government projects, general contracting, and export of large complete sets of equipment. The company's key business areas include project planning, project financing, project management and EPC project general contracting for the energy, transportation, education, medical care, agriculture, and infrastructure construction fields.¹⁹¹⁸ It may have subsidiaries in Africa.

20.17. AVIC International Steel Trading Co., Ltd. [中航国际钢贸公司]

Aliases and Former Names:

- AVIC International Steel Trading

Notable Products/Services: steel mill services

Immediate Parent Institution: AVIC International Holding Corporation

Address: No. 5 Hongda Road, Jiangbei District, Ningbo, Zhejiang Province [中国浙江省宁波市江北区洪达路 5 号]¹⁹¹⁹

Website: <https://www.avic-steel.com/cn/index.php>

Archived: <https://web.archive.org/web/20220526151222/https://www.avic-steel.com/cn/index.php/home/index/index.html>

Overview:

AVIC International Steel Trading provides supply chain services for steel mills.¹⁹²⁰

20.18. AVIC International Trade & Economic Development Ltd. [中航技国际经贸发展有限公司]

Aliases and Former Names:

- AVIC International Economic and Trade Corporation [中航国际经贸公司]
- AVIC International Economic and Trade Development Co., Ltd. [中航技国际经贸发展有限公司]¹⁹²¹
- AVIC International Trade & Economic Development Ltd.
- AVIC International TED Ltd.

Notable Products/Services: engineering and industrial services

Immediate Parent Institution: AVIC International Holding Corporation

Address: Floor 20, Block B, Yuanda Center, No. 5 Huizhong Road, Chaoyang District, Beijing [北京市朝阳区慧忠路 5 号远大中心 B 座 20 层]¹⁹²²

Website: <http://www.aited.cn/>

Archived: <https://web.archive.org/web/20211209121356/http://www.aited.cn/>

Key Data:

- Established: November 1995¹⁹²³

Overview:

AVIC International Economic and Trade Development Co. (AITED) works in the fields of bidding, cost consultation, project supervision, import and export, network information services, computer software development, and simulation. The company's core business is tendering agency services. The company's business scope includes engineering and service bidding involving aviation, aerospace, electronics, automobiles, electric power, medical, metallurgy, light industry, and other industries.¹⁹²⁴

20.19. AVIC Lutong Co. Ltd. [中航路通实业有限公司]

Aliases and Former Names:

- AVIC Lutong [中航路通]
- AVIC International Guangzhou [中航国际广州] (former)
- China National Aero-technology Guangzhou Co. Ltd. [中国航空技术广州有限公司]
- 中航国际广州(公司)
- 中国航空技术广州有限公司

Notable Products/Services: asphalt, electromechanical parts

Immediate Parent Institution: AVIC International Holding Corporation

Address: 3rd and 4th Floor, South Tower, Poly International Plaza, No. 1 East Pazhou Avenue [广州市海珠区琶洲大道东一号保利国际广场南塔 3、4 楼]¹⁹²⁵

Key Data:

- Established: 1 February 2011
- Capital: 300 million RMB in registered capital (at establishment)¹⁹²⁶

Overview:

AVIC Lutong Industrial Co. is a specialized company established by AVIC International focused on asphalt and electromechanical parts production.¹⁹²⁷

Known Subsidiaries:

- Guangxi Expressway Logistics Co. Ltd.
- Sichuan AVIC Luqiao Co. Ltd.
- Guangzhou Freight Forwarder Co. Ltd.
- Hunan AVIC Lutong Co. Ltd.
- Jiangxi Luante Co. Ltd.
- Tianjin AVIC Lutong Co. Ltd.
- Guangxi AVIC Lutong Co. Ltd.
- Chongqing AVIC Lutong Co. Ltd.
- Beijing AVIC Lutong Co. Ltd.
- Guizhou Qianhe Logistics Col. Ltd.
- Chengdu Branch Company¹⁹²⁸

20.20. Shennan Circuits Co., Ltd. [深南电路股份有限公司]

Aliases and Former Names:

- Shennan Circuits [深南电路]

Notable Products/Services: printed circuit board (PCB) products, Systems-in-Package (SIP), and related services¹⁹²⁹

Immediate Parent Institution: AVIC International Holding Corporation

Corporate Ownership: AVIC International Holding Corporation [中国航空技术国际控股有限公司] (63.97%)¹⁹³⁰

Address:

- No. 1639, Yanlong Avenue, Pingdi Street, Longgang District, Shenzhen [深圳市龙岗区坪地街道盐龙大道 1639 号] (Headquarters)
- No. 99, Qiaocheng East Road, Nanshan District, Shenzhen [深圳市南山区侨城东路 99 号] (Nanshan District office)
- No. 18, Changjiang East Road, Xinwu District, Wuxi, Jiangsu Province [江苏省无锡市新吴区长江东路 18 号] (Wuxi office)¹⁹³¹

Website: <http://www.scc.com.cn>

Key Data:

- Established: 1984¹⁹³²
- Capital: 489 million RMB in registered capital (at establishment)¹⁹³³
- Personnel: over 12,000 employees¹⁹³⁴

Overview:

Shennan Circuit Co. (SCC) carries out full value chain services, including solution design, manufacturing, electronic assembly, micro-assembly, and testing.¹⁹³⁵ It produces printed circuit boards (PCBs), printed circuit board assemblies (PCBAs), PCB substrates, and Systems-in-Package (SIP).¹⁹³⁶

The company is a key high-tech enterprise of the National Torch Program, China's first national technology innovation demonstration enterprise, and a major center in China's printed circuit board industry. It chairs the China Electronic Circuit Industry Association (CPCA) and the CPCA Standards Committee. SCC headquarters is in Shenzhen, Guangdong Province, China. Its main production bases are located in Shenzhen, China, Wuxi and Nantong. It also claims to have subsidiaries in North America and R&D sites in Europe.

Known Subsidiaries:

- Subsidiaries in North America and R&D sites in Europe¹⁹³⁷
- Shennan Circuits Co., Ltd. Longgang Branch [深南电路股份有限公司龙岗分公司] in Longgang District of Shenzhen¹⁹³⁸

Key Personnel:

- Yang Zhicheng [杨之诚]: Chairman
- Zhou Jinqun [周进群]: CEO¹⁹³⁹

Equipment/Facilities:

- Production bases Shenzhen, China, Wuxi and Nantong, China¹⁹⁴⁰
- Secondary office in Nanshan district of Shenzhen, besides its main headquarters¹⁹⁴¹

Inclusion on U.S. Entity Lists:

- Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁹⁴²

20.21. Shenzhen Aero-Fasteners MFG Co., Ltd. [深圳航空标准件有限公司]**Aliases and Former Names:**

- Shenzhen Aviation Standard Parts Co., Ltd. [深圳航空标准件有限公司]

Notable Products/Services: fasteners, high-strength bolts, precision screws, nuts, gaskets

Immediate Parent Institution: AVIC International Holding Corporation

Address: Yuanfu Road, Third Functional Zone, Dalangtongfuyu Industrial Zone, Longhua New District, Shenzhen, Guangdong Province [深圳市龙华新区大浪同富裕工业区第三功能区园富路]¹⁹⁴³

Key Data:

- Established: 1982¹⁹⁴⁴

Overview:

Shenzhen Aviation Standard Parts Co. (SHBC) produces standard fasteners. The company has produced fasteners for automobiles and motorcycles, as well as high-strength bolts, precision screws, nuts, gaskets and other precision special-shaped products for automobiles, air conditioners/refrigerator compressors, OA/IT, mechanical equipment, communications, home appliances and other industries.¹⁹⁴⁵

Known Subsidiaries:

- Shanghai Superior Fastening System Co., Ltd. [卓越紧固系统（上海）有限公司]
- Huizhou Superior Fastening System Co., Ltd. [惠州卓越紧固系统有限公司]
- Hunan Zhonghang Fastening System Co., Ltd. [湖南中航紧固系统有限公司]
- Hengyang AVIC Electroplating Center Co., Ltd. [衡阳中航电镀中心有限公司]¹⁹⁴⁶

20.22. AVIC Supply Corporation [中航国际供应链科技有限公司]

Aliases and Former Names:

- AVIC Supply [中航供应链]

Notable Products/Services: coordination and management of raw materials, mechanical and electrical products for aviation industry¹⁹⁴⁷

Immediate Parent Institution: AVIC International Holding Corporation

Corporate Ownership: AVIC International Holding Corporation [中国航空技术国际控股有限公司] (100%)¹⁹⁴⁸

Address:

- AVIC Plaza, No.10, JIA Dongzhimen South St., Dongcheng District, Beijing, China
- 6/F, CATIC Plaza, No.18, Beichen Dong St., Chaoyang District, Beijing, China
- 12-13/F, Tongye Mansion, No. 32, Tieling Rd., Yangpu District, Shanghai, China¹⁹⁴⁹
- Room 1201, No. 32, Tieling Road, Yangpu District, Shanghai [上海市杨浦区铁岭路 32 号 1201 室]¹⁹⁵⁰

Website: <https://www.avicsupply.com.cn/> or <https://avicsupply.avicnet.cn/>

Key Data:

- Established: 1951¹⁹⁵¹
- Capital: 629.6774 million RMB in registered capital¹⁹⁵²
- Personnel: over 2,000 employees¹⁹⁵³
- Floor space: over 400,000 sqm of warehouse space in at least 11 PRC cities¹⁹⁵⁴

Overview:

AVIC International Supply Chain Technology Co., Ltd. (AVIC Supply) is the main channel for the supply of materials in China's aviation industry. It is responsible for the supply of

materials to the aviation manufacturing industry, the management of new equipment trial production, and other related tasks.¹⁹⁵⁵

Clients include domestic and foreign aviation manufacturing enterprises such as AVIC, AECC, COMAC, Boeing, and Airbus.¹⁹⁵⁶ Since 2017, the company has been identified by AVIC as the support unit for aviation equipment component management and application verification.¹⁹⁵⁷

In December 2014, the company initiated the establishment of the "AVIC International Aviation Parts Manufacturing Enterprise Alliance". The Alliance is the first domestic alliance organization to locate and focus on aerospace parts manufacturing. At present it has 50 member and observer units, with a total output value of more than 10 billion RMB.¹⁹⁵⁸

Notable Collaborations:

Domestic:

- Clients include AECC, COMAC, CETC, CEC, Sinopec, Sinomach, NAURA, Baowu, China Erzhong

International:

- Clients include Boeing, Airbus, Snecma (Safran), Rolls Royce, Pratt Whitney, Studer¹⁹⁵⁹
1960 1961

Known Subsidiaries:

- Aritex¹⁹⁶²
- Sichuan AVIC Materials Trading Co., Ltd. [四川中航物资贸易有限公司]
- China Aviation Industry Supply and Marketing Zhongnan Co., Ltd. [中国航空工业供销中南有限公司]
- China Aviation Industry Supply and Marketing Jiangxi Co., Ltd. [中国航空工业供销江西有限公司]
- China Aviation Industry Supply and Marketing Harbin Co., Ltd. [中国航空工业供销哈尔滨有限公司]
- China Aviation Industry Supply and Marketing Shanghai Co., Ltd. [中国航空工业供销上海有限公司]
- China Aviation Industry Supply and Marketing Northwest Co., Ltd. [中国航空工业供销西北有限公司]
- Guizhou AVIC International Logistics Co., Ltd. [贵州中航国际物流有限公司]
- Hunan Aviation Materials Co., Ltd. [湖南航空物资有限公司]
- Chengdu Chengfei Huachi International Freight Forwarding Co., Ltd. [成都成飞华驰国际货运代理有限公司]
- China Aviation Industry Supply and Marketing North China Co., Ltd. [中国航空工业供销华北有限公司]
- China Aviation Industry Supply and Marketing Shenguang Co., Ltd. [中国航空工业供销深广有限公司]

- Hunan AVIC Environmental Resources Technology Development Co., Ltd. [湖南中航环境资源技术发展有限公司]
- AVIC International Storage and Transportation Co., Ltd. [中航技国际储运有限职责公司]
- AVIC Lingang International Logistics (Shanghai) Co., Ltd. [中航临港国际物流（上海）有限公司]
- AVIC Xiangfeng International Logistics (Shanghai) Co., Ltd. [中航翔凤国际物流（上海）有限公司]
- AVIC Wanglian International Logistics Co., Ltd. [中航网联国际物流有限公司]
- Shaanxi Aviation Industry Logistics Co., Ltd. [陕西航空工业物流有限公司]
- Kaiyuan Aviation Industry Supply, Marketing, Storage and Transportation Co., Ltd. [开原航空工业供销储运有限公司]
- Guangnan Aviation Industry Logistics Shenzhen Co., Ltd. [广南航空工业物流深圳有限公司]
- AVIC Rongxin Investment Co., Ltd. [中航荣欣投资有限公司]
- Beijing Hangzhen Technology Co., Ltd. [北京航臻科技有限公司]
- China Aviation Industry Supply and Marketing Changsha Co., Ltd. [中国航空工业供销长沙有限公司]
- Chengdu Hangwei Precision Cutting Tools Co., Ltd. [成都航威精密刀具有限公司]
- Wuhan Aviation Industry UAV Service Co., Ltd. [武汉航空工业无人机服务有限公司]
- Hubei AVIC Metallurgical Steel Special Steel Sales Co., Ltd. [湖北中航冶钢特种钢销售有限公司]¹⁹⁶³

Key Personnel:

- Li Qifeng [李其峰]: Chairman; Party Secretary
- Dong Hai [董海]: CEO; Deputy Party Secretary
- Li Peng [李鹏]: Deputy Party Secretary; Secretary of Discipline Inspection Commission
- Peng Maohua [彭卯华]: Chief Accountant
- Lu Jun [卢军]: Deputy CEO
- Wang Zhibao [王志宝]: Deputy CEO
- Huang Haihan [黄海涵]: Deputy CEO
- Wang Ping [王平]: Deputy CEO¹⁹⁶⁴

Equipment/Facilities:

- AVIC Supply has warehouses in Beijing, Shanghai, Harbin, Chengdu, Guiyang, Wuhan, Shenzhen, Nanchang, Fuzhou, Shenyang, Xi'an and other regions of China¹⁹⁶⁵

20.22.1. ARITEX [中航国际埃瑞泰克斯公司]

Notable Products/Services: aerospace technology development services

Immediate Parent Institution: AVIC Supply Corporation

Address: No. 5 Workshop, Lingang Industrial Park, No. 1555 Cenglin Rd., Pudong New Area, Shanghai [上海市浦东新区临港地区层林路 1555 号 5 号厂房]¹⁹⁶⁶

Website: <https://www.aritex-es.com/>

Key Data:

- Established: 1961¹⁹⁶⁷

Overview:

Aritex provides services related to the aerospace sector involving technology development. The company has been under AVIC since April 2016, with a permanent presence in Europe, Asia, the U.S., Central, and South America.

Founded in 1961 as a company that supplied industrial resources for the automotive sector, Aritex diversified its activity to the aerospace sector in 2001.¹⁹⁶⁸

20.23. *Tianma Microelectronics Co., Ltd.* [天马微电子股份有限公司]

Aliases and Former Names:

- Tianma Microelectronics [天马微电子]
- Shenzhen Tianma Microelectronics Co., Ltd. [深圳天马微电子股份有限公司] (former)

Notable Products/Services: displays for home and professional products

Immediate Parent Institution: AVIC International Holding Corporation

Corporate Ownership:

- AVIC International Holding Corporation [中国航空技术国际控股有限公司] (actual controller) (27.65%)
- AVIC International Holdings Limited (13.35%)¹⁹⁶⁹

Address: No.88, Daxin Road, Tianma Building, Nanshan District, Shenzhen, China [深圳市南山区大新路 88 号 天马大厦]¹⁹⁷⁰

Website: <https://www.tianma.cn/>

Key Data:

- Established: 1983¹⁹⁷¹
- Capital: 2.45 billion RMB in registered capital¹⁹⁷²
- Personnel: over 54,000 employees
- Floor space: Shenzhen main industrial base covers around 60,000 sqm¹⁹⁷³

Overview:

Tianma Microelectronics focuses on providing displays for smart mobile terminals, smartphones, tablets, and advanced laptop devices, as well as professional displays optimized for automotive, medical, smart-home, POS, HMI and other industrial applications. It also produces high-end medical devices, navigation, smart-home, and VOIP products. In 2019 Tianma's market share for LTPS TFT LCD smartphone displays ranked first worldwide.

The company was founded in 1983 and was listed on the Shenzhen Stock Exchange in 1995. Tianma has at least 10 branches and subsidiaries in Shenzhen, Xiamen, Shanghai, Chengdu, Wuhan, Japan, and the EU.¹⁹⁷⁴

Known Subsidiaries:

- Xiamen Tianma [厦门天马]
 - Present on U.S. Department of Defense Communist Chinese Military Companies List¹⁹⁷⁵
- Wuhan Tianma [武汉天马]
- Chengdu Tianma [成都天马]
- Shanghai Tianma [上海天马]
- Tianma Japan [天马日本]
- Shanghai AVIC Optoelectronics [中航上海电子]
- Shanghai Tianma AMOLED [上海天马有机发光显示技术]¹⁹⁷⁶

Key Personnel:

- Peng Xuhui [彭旭辉]: Chairman
- Cheng Wei [成为]: CEO
- Chen Bingxia [陈冰峡]: Secretary of the Board¹⁹⁷⁷

OTHER ENTITIES

The following is a list of entities whose specific organizational subordination under AVIC is unclear, or whose subordination to AVIC itself is unclear (may or may not be connected to AVIC, may no longer be connected to AVIC, or may no longer exist).

- Shuangyang Aircraft Manufacturing Plant [双阳飞机制造厂]
 - Aka Factory 162 [162 厂] (current status unclear)
- AVIC United Innovation Technology Co. Ltd. [中航联创科技有限公司]
- Shenzhen AVIC Bit Communication Technology Co., Ltd. [深圳市中航比特通讯技术股份有限公司]
 - Probably no longer under AVIC
- Zhongtianze Holding Group Co., Ltd. [中天泽控股集团有限公司]
 - Possibly no longer under AVIC
- AVIC Lithium Battery
- AVIC Laser Forming Manufacturing
- Beijing AVIC City / Beijing AVIC City Technology Co., Ltd. [北京中航城/北京中航城科技有限公司]
- Military Testing Service Network [军工检测服务网]
- China Aviation Industry Science and Technology Corporation [中国航空工业科学技术总公司]
- AVIC Publishing & Media [中航出版传媒]
- Zhongzhen Accounting Consulting Co., Ltd. [中振会计咨询有限责任公司]
- (AVIC) Shanghai Aviation Special Vehicle Co., Ltd. [(中航工业)上海航空特种车辆有限责任公司]
- AVIC Huide Wind Power Engineering Co., Ltd. [中航惠德风电工程有限公司]
- AVIC International Shenzhen Branch [中航国际深圳公司] / China Aviation Technology Shenzhen Co., Ltd. [中国航空技术深圳有限公司]
- AeroInfo [航空工业信息网]
- Harmony World Watch Centre [亨吉利世界名表中心]
- Rainbow [天虹商场]
- RONGRONG [融融网]

APPENDIX 1: U.S. GOVERNMENT EXPORT SCREENING LISTS AND CRITERIA

Export Screening List Comparisons		
List	Entity description	Restriction
Treasury OFAC - Chinese Military (-Industrial Complex) Companies / Executive Order 14032	“operate or have operated in the defense and related materiel sector or the surveillance technology sector of the economy of the PRC” ¹⁹⁷⁸	Securities investments sanctions
Commerce BIS - Entity List	“reasonably believed to be involved, or to pose a significant risk of being or becoming involved, in activities contrary to the national security or foreign policy interests of the United States” ¹⁹⁷⁹	Export controls
Commerce BIS - 'Military End-User' (MEU) List	“Military end-use” / “military end-user” ¹⁹⁸⁰	Export controls
DoD – Chinese Military Companies Operating in the United States	“(i)(I) directly or indirectly owned, controlled, or beneficially owned by, or in an official or unofficial capacity acting as an agent of or on behalf of, the People’s Liberation Army or any other organization subordinate to the Central Military Commission of the Chinese Communist Party; or (II) identified as a military-civil fusion contributor to the Chinese defense industrial base; and (ii) engaged in providing commercial services, manufacturing, producing, or exporting.” ¹⁹⁸¹	N/A
DoD - Communist Chinese Military Companies Operating in United States / Executive Order 13959 (inactive)	“(i) is owned or controlled by, or affiliated with, the People's Liberation Army or a ministry of the government of the People's Republic of China or that is owned or controlled by an entity affiliated with the defense industrial base of the People's Republic of China; and (ii) is engaged in providing commercial services, manufacturing, producing, or exporting.” ¹⁹⁸²	Prohibition of securities investment (including subsidiaries)

ENDNOTES

- ¹ "2022 Corporate Social Responsibility Report" [2022 社会责任报告], AVIC, 30 June 2023. <https://web.archive.org/web/20231201010443/https://www.avic.com/upload/resources/file/2023/06/30/128673.pdf>
- ² "2022 Corporate Social Responsibility Report" [2022 社会责任报告], AVIC, 30 June 2023. <https://web.archive.org/web/20231201010443/https://www.avic.com/upload/resources/file/2023/06/30/128673.pdf>; "Aviation Industry Corporation of China 2023 Tracking Rating Report" [中国航空工业集团有限公司 2023 年度跟踪评级报告], Chengxin International Credit Rating Co., Ltd., [中诚信国际], 27 July 2023. <https://web.archive.org/web/20240104200752/http://qxb-pdf-osscache.qixun.com/AnBaseinfo/ec059ab228db2c78cdc3cd9094a4e00e.pdf>
- ³ "Business Strength [业务实力]," Aviation Industry Corporation of China [中国航空工业集团有限公司], accessed 7 December 2021, <https://web.archive.org/web/20220509054957/https://www.avic.com/sycd/gywm/ywsl/>; "2022 Corporate Social Responsibility Report" [2022 社会责任报告], AVIC, 30 June 2023. <https://web.archive.org/web/20231201010443/https://www.avic.com/upload/resources/file/2023/06/30/128673.pdf>
- ⁴ "Business Strength [业务实力]," Aviation Industry Corporation of China [中国航空工业集团有限公司], accessed 7 December 2021, <https://web.archive.org/web/20220509054957/https://www.avic.com/sycd/gywm/ywsl/>
- ⁵ Lucie Béraud-Sudreau, Xiao Liang, Diego Lopes da Silva, Nan Tian and Lorenzo Scarazzato, "The SIPRI Top 100 Arms-Producing and Military Services Companies, 2021," Stockholm International Peace Research Institute, December 2022, https://www.sipri.org/sites/default/files/2022-12/fs_2212_top_100_2021.pdf; "Top 100 for 2022," Defense News, accessed February 2023, <https://people.defensenews.com/top-100/>; "Global 500," Fortune Magazine, accessed February 2023, <https://fortune.com/ranking/global500/2022/search/?sector=Aerospace+%26+Defense>; "Top 100 for 2023," Defense News, accessed January 2023, <https://people.defensenews.com/top-100/>; Xiao Liang, Lorenzo Scarazzato, Dr Lucie Béraud-Sudreau, Dr Nan Tian, Dr Diego Lopes da Silva, Yeoun Choi and Eero Kristjan Sild, "The SIPRI Top 100 Arms-producing and Military Services Companies, 2022," Stockholm International Peace Research Institute, December 2023. https://www.sipri.org/sites/default/files/2023-11/fs_2312_top_100_2022.pdf; "Global 500," Fortune Magazine, accessed January 2024. https://fortune.com/ranking/global500/search/?fg500_industry=Aerospace+%26+Defense
- ⁶ Deng Liqun, Ma Hong, Wu Heng, ed., China Today: Defence Science and Technology, (In English), Vol I & II, Beijing, National Defence Industry Press, 1993.
- ⁷ "Development Path" [发展历程], Aviation Industry Corporation of China, captured 23 September 2021, <https://web.archive.org/web/20220509054954/https://www.avic.com/sycd/gywm/jtgc/fzlc/>
- ⁸ "Development Path" [发展历程], Aviation Industry Corporation of China, captured 23 September 2021, <https://web.archive.org/web/20220509054954/https://www.avic.com/sycd/gywm/jtgc/fzlc/>
- ⁹ Deng Liqun, Ma Hong, Wu Heng, ed., China Today: Defence Science and Technology, (In English), Vol I & II, Beijing, National Defence Industry Press, 1993.
- ¹⁰ "History," Aviation Industry Corporation of China, (as) accessed October 2015, <https://web.archive.org/web/20191109080902/http://www.avic.com/en/aboutus/history/index.shtml>
- ¹¹ "Development Path" [发展历程], Aviation Industry Corporation of China, (as) accessed September 2021, <https://web.archive.org/web/20220509054954/https://www.avic.com/sycd/gywm/jtgc/fzlc/>
- ¹² "Development Path" [发展历程], Aviation Industry Corporation of China, (as) accessed September 2021, <https://web.archive.org/web/20220509054954/https://www.avic.com/sycd/gywm/jtgc/fzlc/>
- ¹³ "The J-20 test flight is not aimed at Gates' visit to China" [歼-20 试飞并非针对盖茨访华], 21st Century Business Herald [21 世纪经济报道], 12 January 2011. <https://web.archive.org/web/20230111201838/https://finance.sina.com.cn/roll/20110112/01109236867.shtml>; "Chinese stealth fighter makes first test flight," Associated Press, 11 January 2011. https://web.archive.org/web/20110113034144/http://news.yahoo.com/s/ap/20110111/ap_on_bi_ge/as_china_stealth_fighter
- ¹⁴ "China Aviation Development Corporation, a state-owned industrial and commercial enterprise, is quietly listed: the registered capital is 50 billion, and Beijing State-owned Assets becomes a shareholder" [军工央企中国航发悄然挂牌：注册资本 500 亿，北京国资入股], The Paper [澎湃新闻], 13 June 2016. https://web.archive.org/web/20211223151011/http://m.thepaper.cn/renmin_prom.jsp?contid=1482629&from=renmin; "中国航发正式成立 成中国第十二大军工集团], Global Times, 14 June 2016. <https://web.archive.org/web/20230112184949/http://www.taihainet.com/news/military/zgjq/2016-06-14/1726077.html>
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- ¹⁶ "China's Aviation Industry: Lumbering Forward," CASI, August 2019. https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/Infrastructure/2019-08-02%20Lumbering_Foward_Aviation_Industry.pdf
- ¹⁷ "History," AVIC, (as) accessed November 2019. <https://web.archive.org/web/20191109080902/http://www.avic.com/en/aboutus/history/index.shtml>
- ¹⁸ "2009 AVIC Social Responsibility Report" [2009 中航工业社会责任报告], Aviation Industry Corporation of China, 2009, page 13, https://web.archive.org/web/20221121143911/http://194.246.119.58/pdfs/syntao/%7B67A61D71-F061-42B5-BFF8-C640E3BF1762%7D_zhongguohangkonggongye.pdf; "2021 AVIC Social Responsibility Report" [2021 中航工业社会责任报告], Aviation Industry Corporation of China, 2021, page 7, <https://web.archive.org/web/20221004152104/https://www.avic.com/upload/resources/file/2022/07/29/98984.pdf>
- ¹⁹ "2009 AVIC Social Responsibility Report" [2009 中航工业社会责任报告], Aviation Industry Corporation of China, 2009. https://web.archive.org/web/20221121143911/http://194.246.119.58/pdfs/syntao/%7B67A61D71-F061-42B5-BFF8-C640E3BF1762%7D_zhongguohangkonggongye.pdf; "To the Blue Sky – 2015 Social Responsibility Report" [致敬蓝天 – 2015 社会责任报告], AVIC, 2015. https://web.archive.org/web/20221119015304mp_/https://www.avic.com/upload/resources/file/2021/07/27/50032.pdf?PC=PC

- ²⁰ "Aviation Industry Corporation of China, Ltd. CSR 2021 Report" [中国航空工业集团有限公司 CSR 2021 报告], AVIC, accessed October 2022. <https://web.archive.org/web/20221004152104/https://www.avic.com/upload/resources/file/2022/07/29/98984.pdf>
- ²¹ "Business Fields" [业务领域], Aviation Industry Corporation of China, captured 12 January 2023, <https://web.archive.org/web/20230112053514/https://www.avic.com/>
- ²² "Group Introduction" [集团简介], Aviation Industry Corporation of China [中国航空工业集团有限公司], accessed 7 December 2021, <https://web.archive.org/web/20211020165647/https://www.avic.com/c/2021-03-26/511215.shtml>
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- ²⁴ "Civil Aviation," Aviation Industry Corporation of China, captured 9 November 2021, <https://web.archive.org/web/20191109040409/http://www.avic.com/en/forbusiness/civilaviation/index.shtml>
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