



Sichuan Tengden Technology: Privately Owned, State Sponsored

By Eli Tirk

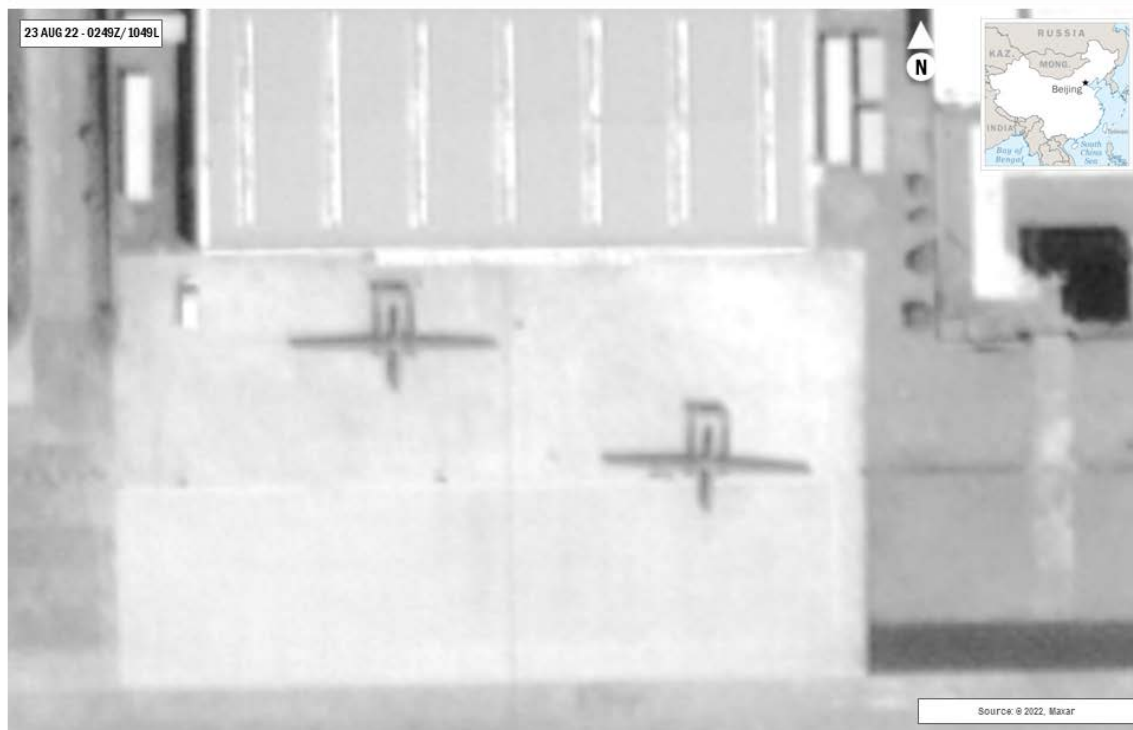
Traditionally, the People's Liberation Army (PLA) acquires whole systems that are manufactured or integrated by companies partially- or wholly-owned by the state-owned enterprises (SOEs) that fall under the State Administration for Science, Technology, and Industry for National Defense (SASTIND). It is very rare for the PLA to acquire a complete system manufactured by an ostensibly privately-owned company. Over the past several years Sichuan Tengden Technology Co.'s (四川腾盾科技有限公司) TB series of medium-altitude long endurance unmanned aerial vehicles (UAVs) have been marketed, tested, and used for remote delivery, forest fire monitoring and dispensing of flame retardant,¹ and emergency telecom signal boosting² applications by Chinese companies and ministries, and most recently may have been involved with cloud seeding activities³ relating to the dire drought in southern China. Additionally, it appears the military version, the TB-001, has been used by the PLA on several occasions to conduct intelligence, surveillance, and reconnaissance (ISR) sorties skirting the air defense identification zones of Japan and Taiwan.⁴ Most recently, sorties of the TB-001 in early August were in the vicinity of impact areas for PLA Rocket Force (PLARF) missiles during the exercises conducted by the PLA in the beginning of that month leading some observers to conclude that these UAVs may have been adopted by the PLARF.⁵ Imagery of the PLARF Base 61 subordinate UAV regiment from August 23rd indicates that this unit has indeed adopted TB-001s, as seen below. If this is the case, it is one of the first cases of a mixed ownership enterprise supplying the PLA a large and complete system instead of individual components that would be integrated into a system produced by a defense conglomerate.



China: Two TB-001 UAVs on Apron at Base 61 UAV Regiment Airfield
TB-001s Located at 29.268771, 120.352875

UNCLASSIFIED

GEO: 291008N 1202111E | MGRS: 51RTN 42800 40677 Geographic coordinates are approximate and should not be used for navigation or targeting purposes



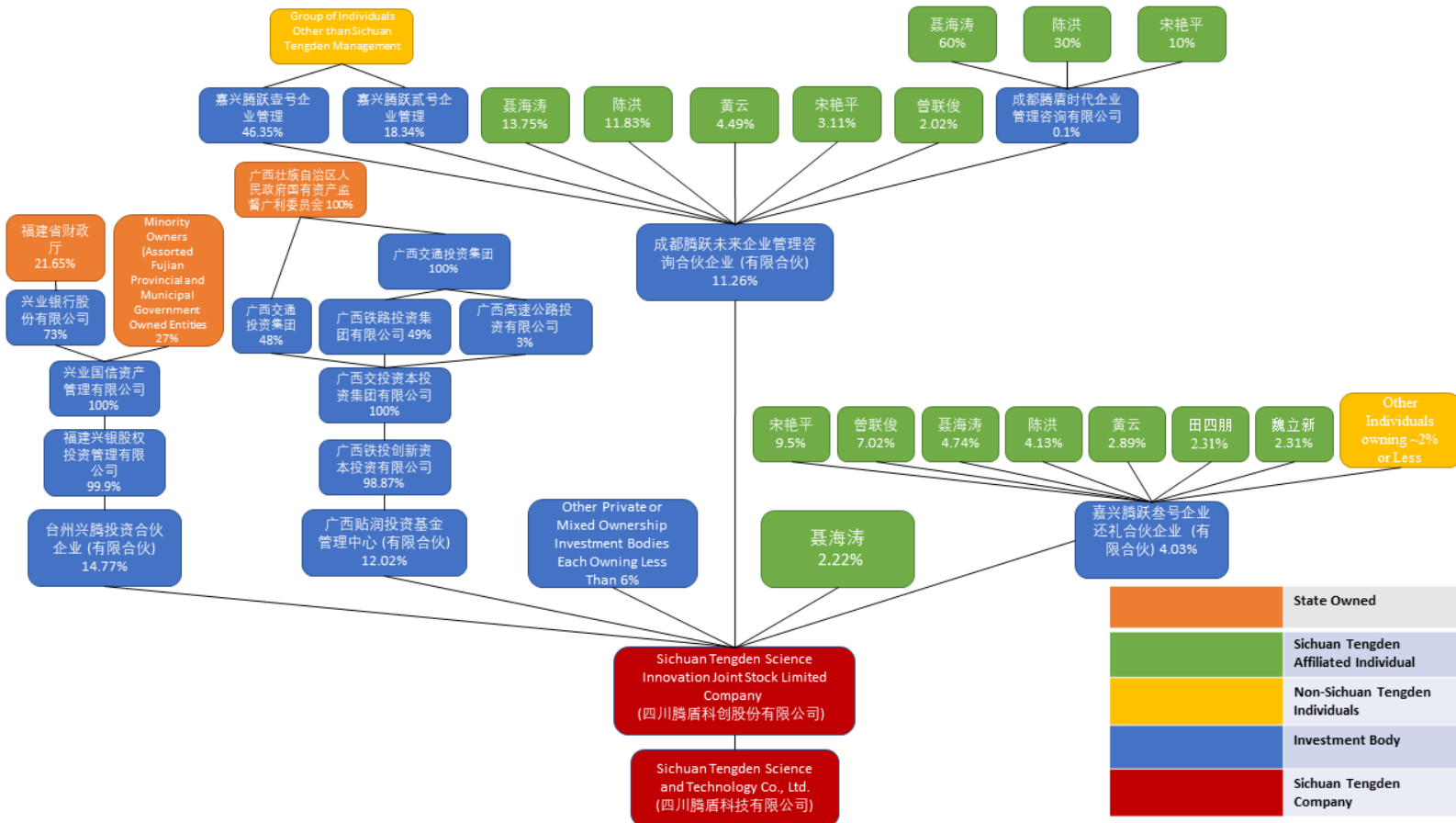
UNCLASSIFIED

1 of 1 | SEP 2022 | China Aerospace Studies Institute

Sichuan Tengden Technology is an ostensibly privately-owned drone manufacturing company that specializes in the development and manufacturing of medium-to-large unmanned aerial systems for military and civilian applications. Sichuan Tengden Science and Technology's is wholly owned, via direct and indirect ownership, by Sichuan Tengden Science Innovation Joint Stock Limited Company (四川腾盾科创股份有限公司). Through their investments, the Fujian provincial and Guangxi Zhuang Autonomous Region governments control the two largest ownership stakes in Sichuan Tengden Science Innovation Joint Stock Limited Company (四川腾盾科创股份有限公司).⁶ The third largest share of Sichuan Tengden Science Innovation Joint Stock Limited Company is an investment partnership controlled by individuals outside of either Sichuan Tengden company. However, this investment partnership is partially owned by individuals within Sichuan Tengden companies, via minority ownership stakes.⁷ An investment partnership that maintains far less ownership of the company is also around 30 percent owned by a group of Sichuan Tengden Science and Technology Co., Ltd. And Sichuan Tengden Science Innovation Joint Stock Limited Company executives and board members. Furthermore, Sichuan Tengden Science and Technology Co., Ltd. Founder Nie Haitao (聂海涛) directly owns around

two percent of Sichuan Tengden Science Innovation Joint Stock Limited Company.⁸ An overview of this ownership arrangement is depicted below.

Sichuan Tengden Science and Technology Co., Ltd. Ownership Structure



Nie is a former deputy director and deputy chief engineer of the Aviation Industry Corporation of China (AVIC) Chengdu Aircraft Design Research Institute (成都飞机设计研究所), also known as the 611th Research Institute.⁹ During his time at the 611th RI, Nie participated in the design process of the J-10 and the FC-1. Additionally, Nie has served on several expert committees including as the group lead for the AVIC 863 Program Key Project Group (中航工业国家 863 计划重大专项专家组)¹⁰ and as a Central Military Commission Science and Technology Committee (中央军委科技委) expert.¹¹ Nie’s experience and ties to the defense industry and the government bodies responsible for managing defense science and technology development undoubtedly helped him in establishing his company, obtaining large government investment, and marketing is company’s products. In addition to Nie, the company is also said to employ engineers who worked on UAV projects at the 611th RI prior to their employment by Sichuan Tengden Technology.¹²

While the company describes itself as *mincanjun* (民参军),¹³ indicating the company primarily develops systems intended for civilian applications that also happen to be dual-use, the exact nature of these use cases, such as testing of fire retardant delivered by drone dropped air bust bombs,¹⁴ and the founders background, does not lend the most credibility to it primarily intending to develop UAVs for civilian functions. Additionally, Sichuan Tengden Technology possesses the necessary certifications and licenses for the production of military equipment. These include the necessary GJB 9001 quality control standard, a class two SASTIND classified information access certificate, a weapons R&D and production certificate, and a weapons manufacturing certificate.¹⁵ Sichuan Tengden Technology has also received the necessary licensure for weapons exports. These licenses and certifications are difficult to obtain and maintain, indicating that the company clearly intends to supply the PLA. Aside from efforts to get the PLA Army and possibly the PLA Air Force to procure its systems, Sichuan Tengden Technology actively cooperates with other services and subordinate organizations of the PLA. The company has signed a cooperation agreement with the Academy of Military Sciences National Innovation Institute of Defense Technology (中国人民解放军军事科学院国防科技创新研究院) titled “Intelligent Aircraft Technology Joint Laboratory Construction Cooperative Agreement” 《智能飞行器技术联合实验室建设合作协议》. The company has also worked with the Jiuquan Satellite Launch Center and most likely the Sichuan Provincial Military-Civil Fusion Integration Fund on the construction of commercial space launch site.¹⁶ This partnership may seem confusing at first, but variants of the TB-A are capable of functioning as a mobile satellite ground station,¹⁷ which likely involved input of the PLA Strategic Support Force or other defense conglomerate affiliated organizations.

In an environment with increasingly tighter information control regarding PLA acquisitions and sales, it is not surprising to see so little information regarding any official adoption by the PLA or production numbers of the TB-001. To date, Sichuan Tengden Technology has only one publicized successful sale or contract agreement for its military end use airframes. In early 2021, Sichuan Tengden Technology publicized an agreement with the Saudi Ministry of Defense, under which Sichuan Tengden Technology was paid roughly \$263 Million USD for indigenous Saudi production rights for the TB-001 and associated technology transfer.¹⁸ Prior to this agreement, the TB-001 participated in a 2017 test for emergency logistics delivery. This test was the result of a joint program between Sichuan Tengden Technology and Shunfeng UAS (丰鸟航空科技有限公司).¹⁹ Then in 2018, the TB-001 was used in a 2018 PLAAF Logistics Department exercise focused on UAS based sustainment of disparate forces.²⁰ Sichuan Tengden Technology was also involved in the bidding process for the PLA Army drone contract that was ultimately awarded to the Feilong-1, but Sichuan Tengden Technology is noted as having stood out from the competition.²¹ Sichuan Tengden Technology has supplied UAV flying services to Chinese Academy of Sciences Institute of Propulsion to aid in a project that required flight testing.²² Sichuan Tengden Technology allegedly cooperates with Wuhu Diamond Aero Engine, a minority owned subsidiary of China Electronics Technology Group Corporation (CETC) specializing in the production of aircraft components and engines.²³ In addition to the TB series, Sichuan Tengden Technology’s TU series of amphibious cargo drones have been adopted in a

limited capacity by China Post, which has made its way into footage of a PLA Army exercise supplying troops in the fields with food.²⁴

It is important to note that while on the surface, former defense conglomerate employees flocking to a state funded enterprise which develop dual use systems may be motivated by patriotism or a desire to contribute to industries that improve national status. In reality, reporting by the Institute of Defense Analysis regarding motivations of the founders of space startups in the PRC, indicates that these individuals are primarily motivated by potential economic payoff of commercial opportunities in space.²⁵ These individuals also have experience working for elements of the state run defense industrial base, including Chinese Academy of Sciences (CAS) institutes and China Aerospace Science and Technology Corporation (CASC), similar to the experience of Sichuan Tengden Technology's founder. This also is likely the case for the UAV industry, which is similarly a national priority industry subject to various governmental incentives and funding opportunities and presents a breadth of commercial opportunities in the near future, while maybe not being the most profitable in the near term. However, Sichuan Tengden Technology's clear efforts to win PLA contracts and develop military end-use systems indicates that in the case of this company, the two motivations are not mutually exclusive.

Sichuan Tengden Technology has been singled out by local and regional governments as a company in a key industry to promote the development of. In 2017, when the company initially moved into spaces in the Jinniu High Tech Science and Technology Park, the company likely received investment incentives from the Jinniu District Government to establish its headquarters in the park.²⁶ In 2018, two years after Sichuan Tengden Technology was founded, the company was specifically named in the 2018 Chengdu Political Work Report as a specific company that the municipal government intends to support.²⁷ In addition to the state funding the company has received via ownership stakes purchased by provincial governments, Sichuan Tengden Technology has been the beneficiary of tax breaks focusing on R&D expenses. From 2019 to 2021 the company received more than 32 million RMB in tax credits.²⁸ For context, 32 million RMB over three years does not compare to what an established component of the defense industrial enterprise gets in tax rebates a year, Xi'an Aisheng Technology Group (西安爱生技术集团公司 AKA 365th RI), the manufacturer of the ASN series of ISR UAVs used by the PLAA, assess it will receive around 19.8 million RMB in tax refunds in 2022 alone.²⁹ However, as of 2022, the CFO of Sichuan Tengden Technology company claimed that they were receiving up to four million RMB a month in tax refunds indicating either an increase in deductible R&D expenses or more favorable tax policies allowing the company to deduct more of its existing R&D expenses, putting the company on track to receive better tax incentives than Xi'an Aisheng Technology Group.³⁰ The company has also signed a comprehensive strategic cooperation agreement with the Sichuan provincial military-civil fusion fund that involves cooperation on research funding and the development of research institutes, but was not publicized as involving funding for projects or R&D at Tengden.³¹ Sichuan Tengdun has allegedly received over a billion RMB in investments to build its production facility located at the Zigong Aviation Industry Park, including runway expansion and the construction of large hangars for UAV production.³² Aggressive expansion, including a second large hangar and the runway expansion

began in late 2020. Sources claim that the newer hangar facility was operational as of January 2022.³³

Sichuan Tengden Technology's technical developments, apparent commercial successes, and governmental support have positioned it as an important player in its industry. Sichuan Tengden Technology's involvement with "The Future is Now Institute (TIFO/成都创新天府智能技术研究院有限公司)" allows act as an important player in the aerospace tech startup sector in Sichuan, as desired by the provincial government.³⁴ TFIO has signed a cooperation agreement with the Jinniu District of Chengdu, giving it access to funding and incentives to direct towards startups.³⁵

The UAV industry is a national priority for development, so it is not too surprising to see a private company receive preferential treatment and investment, but the nature of this company's ownership structure and its apparent ability to supply the PLA an integrated system such as a UAS and garner at least limited export contracts sets Sichuan Tengdun up to be a potentially successful player in the future of the PRC's UAV market. While mixed state and private ownership are increasingly common within elements of the aerospace industry, it is more common for these companies to be owned in some capacity by an SOE, defense R&D organization such as a CAS institute, or one of the SASTIND subordinate universities to maintain an ownership stake in a mixed ownership enterprise that for the mixed ownership to be between various state backed investment funds and an individual. Sichuan Tengden Technology has already set its sights on expanding its production capacity, having signed an agreement with the Ruijin Municipal Government, a city in Jiangxi, to build a manufacturing facility for large logistics UAVs in the vicinity of the Ruijin Airport.³⁶ This marks its first production facility outside of Sichuan.

With the apparent success of the PLARF adopting an unknown number of TB-001s, it is unknown the extent to which Sichuan Tengden Technology will see wider adoption of its systems by the PLA. Given Sichuan Tengden Technology's inability to outperform elements of the defense conglomerates when competing head-to-head for PLA procurement contracts in the past, but the apparent adoption of TB-001s by the PLARF, it is difficult to judge how broadly these systems could be adopted. If Sichuan Tengden Technology does end up succeeding in supplying other services of the PLA with the TB-001, it would represent what PRC economic planners hope to achieve in respect to spurring innovation outside of traditional PRC SOE structures by way of targeted military-civil fusion incentives and funding to foster a private enterprise capable of necessary innovation in the defense industry.

Opinions, conclusions, and recommendations expressed or implied within are solely those of the author(s) and do not necessarily represent the views of the Air University, the Department of the Air Force, the Department of Defense, or any other U.S. government agency. Cleared for public release: distribution unlimited.

Endnotes

- ¹“四川造 | 腾盾大型无人机精确巡查西昌森林火灾现场,” 航拍四, April 14, 2020, <https://mp.weixin.qq.com/s/quoXX8asx4zhwh3t5a1SFg>
- ²“要闻 | 日夜兼程 使命必达 双尾蝎无人机紧急驰援泸定抗震救灾工作,” 腾盾科创, September 7, 2022, <https://mp.weixin.qq.com/s/EP0DMXbRmWEEAJMOCJHcdg>
- ³“抗击伏旱! 腾盾科创“及时雨”无人机成功实施人工增雨,” 四川腾盾科创, August 25, 2022, <https://mp.weixin.qq.com/s/5DzPmtC6CtEpU0aySGrNPQ>
- ⁴ Wong, Kelvin, “China's TB001 reconnaissance UAV sighted near Japanese airspace for the first time,” Janes, August 26, 2021, <https://www.janes.com/defence-news/news-detail/chinas-tb001-reconnaissance-uav-sighted-near-japanese-airspace-for-the-first-time>
- ⁵ Aita, Moriki, “Chinese drone TB-001 may have been involved in ballistic missile impact”, NIDS Commentary, no. 239, October 4, 2022, <http://www.nids.mod.go.jp/publication/commentary/pdf/commentary239.pdf>
- ⁶ Qichacha, <https://www.qcc.com/firm/22c3fcfa61f3a59a8dc454e9a86327d.html> and Qichacha, <https://www.qcc.com/firm/ea5e96351441551ec2c713bd2a95ade0.html>
- ⁷ Qichacha, <https://www.qcc.com/firm/22c3fcfa61f3a59a8dc454e9a86327d.html> and Qichacha, <https://www.qcc.com/firm/ea5e96351441551ec2c713bd2a95ade0.html>
- ⁸ Qichacha, <https://www.qcc.com/firm/367f097f86606a3e94bb12d35caf0198.html>
- ⁹ 伍婷婷, “【专访十八大基层代表】航空专家聂海涛: 爱国就是每一个数据和每一张图纸,” CNTV News Network, October 31, 2012, <http://news.cntv.cn/2012/10/31/ARTI1351683960121267.shtml>
- ¹⁰ Baike, Baidu, “聂海涛,” <https://baike.baidu.com/item/聂海涛/7829348>
- ¹¹ 周媛媛, “中央军委科技委首席专家聂海涛一行来我司访问考察, 芜湖钻石航空发动机有限公司,” June 16, 2017, <http://www.wdae-ah.com/article.aspx?articleid=1293>
- ¹² “苦等多年, 腾盾无人机终于开胡, 17 亿卖沙特三发无人机生产线!,” 大水, February 23 2021, <https://new.qq.com/omn/20210223/20210223A0F2MT00.html>
- ¹³ “军民融合强军强国,” 河南塔罗防务科技有限公司, August 30 2021, https://mp.weixin.qq.com/s/DR_7Fx7Lr296XjLviXVIEw
- ¹⁴“2021 年 12 月 06 日, 四川腾盾双尾蝎 A 无人机在西北某机场成功完成卫星制导航空灭火弹靶试任务,” 鹰击-21, July 15, 2022, <https://www.bilibili.com/s/video/BV1mT411J74n>
- ¹⁵ “全方位的军民融合标杆, 四川腾盾科技,” 中国警察网警用装备在线, January 23, 2021, <http://www.cpolicee.com/newssz.asp?id=94>
- ¹⁶ “全方位的军民融合标杆, 四川腾盾科技,” 中国警察网警用装备在线, January 23, 2021, <http://www.cpolicee.com/newssz.asp?id=94>
- ¹⁷ ““谷神星一号”运载火箭成功发射, 背后有“交子系”基金身影,” 红星新闻, August 9, 2022, https://www.sohu.com/a/575476662_116237
- ¹⁸ “中国无人机再获大单, 沙特购买双尾蝎无人机, 直接引进一条生产线,” 军武长征后卫, January 5, 2022, https://www.sohu.com/a/514491947_121289162
- ¹⁹ “星网宇达战略合作伙伴腾盾科技成功完成第二款大型无人机系统首飞,” 星网宁大, February 11, 2018, <http://www.starneto.com/index.php?m=content&c=index&a=show&catid=39&id=179>
- ²⁰ “星网宇达战略合作伙伴腾盾科技成功完成第二款大型无人机系统首飞,” 星网宁大, February 11, 2018, <http://www.starneto.com/index.php?m=content&c=index&a=show&catid=39&id=179>
- ²¹ “大疆两任采购经理贪腐细节被公布, PK 翼龙 飞龙 1 号竞标取得全面胜利……,” 无人机的空, May 25, 2020, https://www.sohu.com/a/397497256_100179202 and “陆军某部招标无人机, 成飞输给民企, 巡航时间差了一倍多,” 品极天下, June 15, 2020, <https://www.xuehua.us/a/5ee78796be61801a9b4b844b>
- ²² “中国科学院力学研究所 2020 无人飞行器制作及飞行试验服务采购项目中标公告,” 中国政府 采购服务信息平台, May 14, 2020, http://www.ccg.gov.cn/cggg/zygg/zbhg/202005/t20200514_14293580.htm
- ²³ “深度| 一鸣惊人! 这家成立不到 2 年的无人机公司, 要造 45 盾最大起飞重量的无人机, 背后有怎样的故事?,” 通航圈, December 20, 2017, <https://mp.weixin.qq.com/s/Tji70NSrdjjnRR-Zn8hoQ> and 周媛媛, “中央军委科技委首席专家聂海涛一行来我司访问考察, 芜湖钻石航空发动机有限公司,” June 16, 2017.

-
- ²⁴ “球首次! 四川腾盾科创争取为无人机产业发展做出更大的贡献!” 中国品牌创新发展工程, July 16, 2022, <https://mp.weixin.qq.com/s/PLBx7lmygwZDF-5oUJdh3A>
- ²⁵ “Evaluation of China’s Commercial Space Sector,” Institute for Defense Analysis Science, Technology, and Policy Institute, September 2019, P 21.
- ²⁶ “四川腾盾科技有限公司整体迁入金牛高新技术产业园区,” 金牛区人民政府, June 19 2017, http://www.jinniu.gov.cn/jinniu/c107567/2017-06/19/content_1a41f3cde4b64a9e9e184e3f404b9cf3.shtml and “金牛高新技术产业园,” 金牛区人民政府, March 23, 2022, http://www.jinniu.gov.cn/jinniu/c107573/2020-12/21/content_6354bb8e1f3f478699f939afc791c445.shtml
- ²⁷ “2018 年成都市政府工作报告,” 宁波市对口支援和区域合作局, June 13, 2018, http://zyhzj.ningbo.gov.cn/art/2018/6/13/art_1229144684_49722142.html
- ²⁸ 岳瀚诚, 赵婉灵, and 刘艳婷, “四川: 退税活水助科技企业竞逐创新赛道,” 新华网, May 12, 2022, http://sc.news.cn/content/2022-05/12/c_1128644465.htm
- ²⁹ “西咸新区: “留”住信心 “退”出机遇,” 西咸税务, September 7, 2022, <https://mp.weixin.qq.com/s/mLzAztUdkZZNM-Nrfb1-SCA>
- ³⁰ “四川: 大规模留抵退税启动 退税“红包”陆续到账,” 国家税务总局, April 2, 2022, <http://www.chinatax.gov.cn/chinatax/c102095/c5174194/content.html>
- ³¹ “腾盾科技董事长聂海涛一行赴四川军民融合基金 座谈并签署战略合作协议,” 四川发展控股有限责任公司, October 16, 2018, <https://mp.weixin.qq.com/s/hsZpKxTROLATeGdBIJOOhQ>
- ³² “成都研发、自贡生产, 四川通用航空和无人机产业有新动向,” http://cdxjj.chengdu.gov.cn/xjfw/c001001/2022-01/12/content_413ea8b8a9514c559df6a9fdc862de02.shtml
- ³³ “成都研发, 自贡生产, 四川通用航空和无人机产业有新动向,” 红星新闻, January 11, 2022, https://www.sohu.com/a/515937651_116237
- ³⁴ “018 成都硬科技盘点: 新经济之城的“硬核”力量,” 天虎科技, December 19, 2018, <http://www.tianhukeji.com/show-254-1008704-1.html>
- ³⁵ “首届 THX 无人机系统应用开发大会暨开发者大会在蓉召开,” 新湖南新闻, December 19, 2017, <http://www.hunantoday.cn/article/201712/201712191021511714.html>
- ³⁶ “江西瑞金市政府牵手四川腾盾科创打造大型物流无人机研发生产基地项目,” 四川同行飞行服务中心, September 7, 2021, https://mp.weixin.qq.com/s/hj3TVOZL33_4qfBTDq_VUQ