

China-Russia Commercial Jets

China and Russia have \$20 billion partnership to replicate Airbus history and make competitive jets



[brian wang](#)

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The China-Russia Commercial Aircraft International Corporation Limited (CRAIC) 50-50 joint venture was launched on May 22, 2017 in Shanghai, targeting a 2025-2028 maiden flight and first delivery. It aims to take 10% of a market dominated by Boeing and Airbus of 9,100 widebodies over 20 years through 2035, with a plane 10-15% cheaper to run.

Based in Shanghai where the assembly line will be located, CRAIC will oversee the programme: technology development, manufacturing, marketing, sales, customer services, and programme

management. The fuselage will be aluminum and total investment will be \$13-20 billion.

For 2023-45, United Aircraft Corporation (UAC) of Russia and the **Commercial Aircraft Corporation of China** (COMAC) forecast a 7,000 widebodies demand for \$1.5 trillion – an average of \$214 million, their goal for first delivery is 2027. The 280 passengers capacity over 12,000 km is comparable to the Airbus A330-900 but with a nine-abreast economy seating, the shrink would seat 230 while the stretch 320.

Major suppliers will be picked among 169 companies by the end of 2018, as detailed design should be completed and a joint engineering center in Moscow with a branch in Shanghai will oversee development, employing around 100 engineers from both countries.

COMAC's will be in charge of the fuselage sections, horizontal and vertical stabilizers, wing fairings, nose cone and landing gear; UAC will develop the composite wing, wing flap systems, engine pylons and main landing gear, with Chinese manufacture if it is cheaper.

According to COMAC. China will design and make the fuselage of the C929, while Russia will design the wings of the wide-body passenger aircraft, which is currently under development. China and Russia will each take half of the work, and send design staff for exchange visits on a non-scheduled basis.

Although the main design center is in Russia, Shanghai will also have its own design office. China could see the joint venture involving joint financial investments, rather than an intellectual property sale, as Russia wants with the research and development center in Moscow and the aircraft manufacturing in Shanghai.

It will be named CR 929 (CR stands for China-Russia) and will come in three variants: the -500 will carry 250 passengers in three-classes with a range of 14,000 km (7,560 nmi), the -600 will have 280 seats and a range of 12,000 km (6,480 nmi) and the -700 will carry 320 over 10,000 km (5,400 nmi).

Concept approval is slated for 2017, early configuration and preliminary design for 2018, design documentation for 2021, first flight for 2023 and introduction for 2025. It will be powered by a western engine at first before an indigenous power plant is developed between Russia's United Engine Corporation and China's AECC, to start testing in 2022 and be certificated in 2027.

Suppliers should be selected by 2018 to mid-2019. A request for proposal for the propulsion system, including the engine and nacelle, have been issued on 21 December 2017, to be answered by 30 May 2018.

A competitive widebody would initially need Western powerplants and onboard systems. The aircraft would need a 77,000–88,000 lbf (340–390 kN) thrust turbofan. Initially, the engine is likely to be supplied by Rolls-Royce or General Electric that already have products in this class.