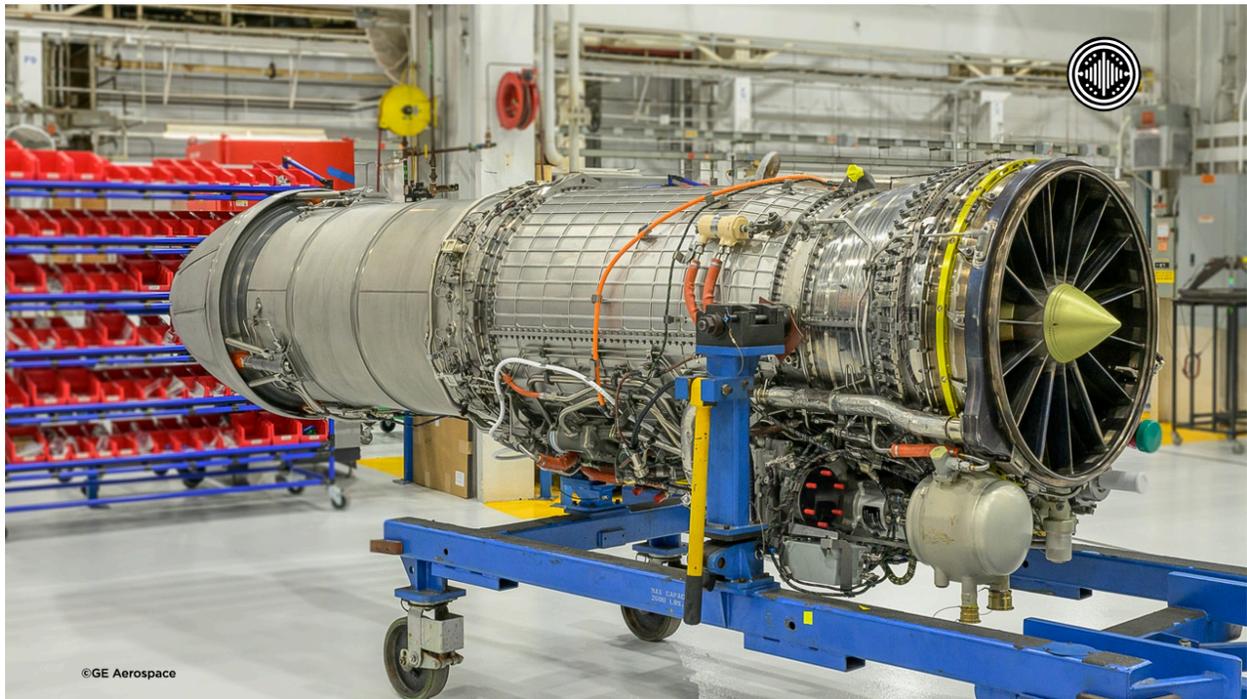


## India's Aerospace Ambitions Take Flight with Landmark HAL-GE Engine Deal



Hindustan Aeronautics Limited (HAL) has officially inked a Manufacturing License Agreement (MLA) with GE Aerospace for the production of F414-INS6 turbofan engines. This significant development, following an initial Memorandum of Understanding (MoU) in June 2023, is a crucial step for India's defense industrial base. The agreement facilitates a substantial Transfer of Technology (ToT) from GE to HAL, enabling the in-country manufacturing of these advanced engines to power India's indigenous TEJAS MK-2 fighter aircraft.

The F414-INS6 engine is a formidable turbofan, boasting a maximum thrust of 98 kilonewtons (kN) and a thrust-to-weight ratio of 9:1 with its afterburner engaged. This variant incorporates advanced features such as Full Authority Digital Engine Control (FADEC) and safety systems optimized for single-engine operation, a vital consideration for modern fighter platforms. The engine has a proven track record, having accumulated over 10 million flight hours globally in various military aircraft, including the F/A-18E/F Super Hornet and the JAS 39 Gripen.

A key aspect of this agreement is the extensive ToT, which includes up to 80% of the engine's manufacturing and technical data. This encompasses critical advanced technologies like special coatings for hot sections, single-crystal blades, and laser drilling processes. Such a comprehensive transfer is unprecedented for India in this sector and shows the deepening strategic partnership between the two nations. As a senior defense source highlighted, "Such a transfer has not happened before and shows the level of trust India evokes in the U.S."

The domestic production of these engines is poised to significantly bolster India's aerospace manufacturing capabilities, fostering innovation and reducing reliance on foreign suppliers. A dedicated manufacturing facility near Bangalore is planned, with production anticipated to commence within two years of the contract's finalization and deliveries for the TEJAS MK-2 program expected within three years. The initial target is to produce 99 engines, with potential for further orders depending on the requirements of the TEJAS MK-2 and the Advanced Medium Combat Aircraft (AMCA) programs. This collaboration is set to enhance India's self-reliance and technological sovereignty in the defense sector, positioning the nation for future advancements in aerospace.