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DRDO Showcases Updated Hypersonic Demonstrator Vehicle With Key Design Refinements

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The Defence Research and Development Organisation (DRDO) has introduced an upgraded version of its Hypersonic Technology Demonstrator Vehicle (HSTDV), marking a notable advancement in India's indigenous hypersonic program.

The enhanced vehicle showcases significant design improvements since its maiden test in 2020, when the scramjet-powered platform successfully reached speeds near Mach 6. At the time, the test validated crucial technologies, including sustained supersonic combustion, high-temperature material performance, and autonomous flight control. However, DRDO scientists identified key areas for refinement based on test data and performance analysis.

In its latest configuration, the HSTDV features a reworked intake design for improved airflow stability, enhanced structural components for withstanding extreme thermal and mechanical stresses, and upgraded flight control systems for precise maneuverability at hypersonic speeds. These developments aim to bolster the reliability and effectiveness of future test flights and pave the way for operational hypersonic cruise missile systems.

The refinements are part of a broader strategic push under India's ambitious hypersonic roadmap, which includes longer-range systems capable of sustained flight at Mach 8 and above. DRDO's pursuit of these technologies positions India among a small group of countries actively developing advanced hypersonic platforms.

The improved HSTDV will continue undergoing rigorous ground and flight testing, contributing to the validation of key technologies for future deployment in India's missile arsenal.