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Follow-On Technology Requirement Study for Advanced Subsonic Transport

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Abstract:	A study was conducted to define and assess the critical or enabling technologies required for a year 2005 entry into service (EIS) engine for subsonic commercial aircraft, with NASA Advanced Subsonic Transport goals used as benchmarks. The year 2005 EIS advanced technology engine is an Advanced Ducted Propulsor (ADP) engine. Performance analysis showed that the ADP design offered many advantages compared to a baseline turbofan engine. An airplane/ engine simulation study using a long range quad aircraft quantified the effects of the ADP engine on the economics of typical airline operation. Results of the economic analysis show the ADP propulsion system provides a 6% reduction in direct operating cost plus interest, with half the reduction resulting from reduced fuel consumption. Critical and enabling technologies for the year 2005 EIS ADP were identified and prioritized.
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› Back to Top