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# Main trends in designing air conditioning systems for future-technology vehicles

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*The article considers the most promising trend in designing aviation air conditioning systems for future-technology vehicles with the objective of optimizing energy consumption and increasing fuel efficiency – that is the replacement of air bleed from the main engines with electrically driven compressors. Using the Boeing 787 Dreamliner aircraft as an example we have analyzed the main advantages and risks of the air conditioning system's flow chart. The article gives a comparative analysis of several air conditioning systems' flow chart alternatives which operate without air bleed from the main engines. As a result of this analysis we assessed the possibility of implementing this flow chart into the short and medium haul aircraft projects. Much attention is given to key requirements for the configuration of on-board systems so that maximum economic effect could be achieved.*

**Keywords:** air conditioning system, electrically driven compressor, vapor compression cycle, “more electric” aircraft, air cycle, fuel efficiency

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