Computational Sciences Experts Group

Evaluating of a dual-use heater with Simcenter Flomaster

SIEMENS
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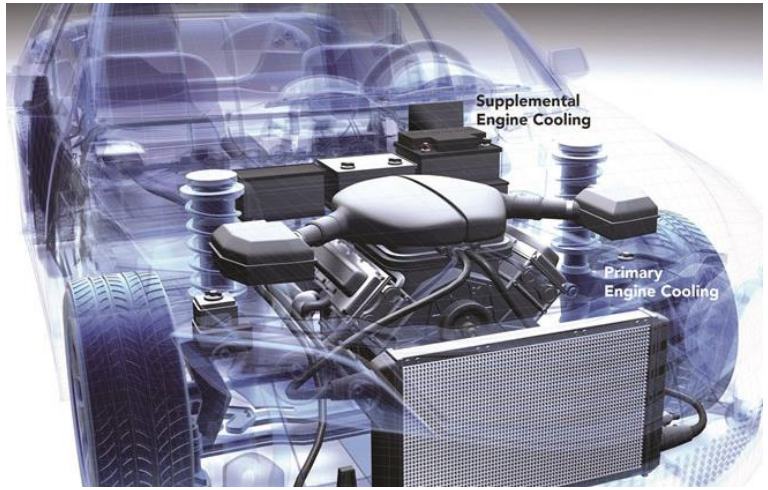
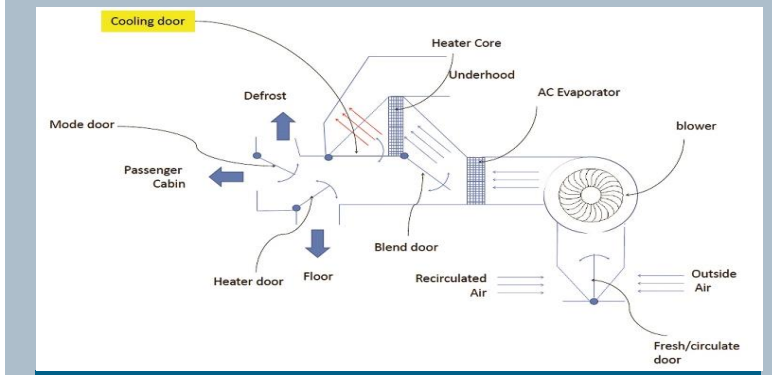
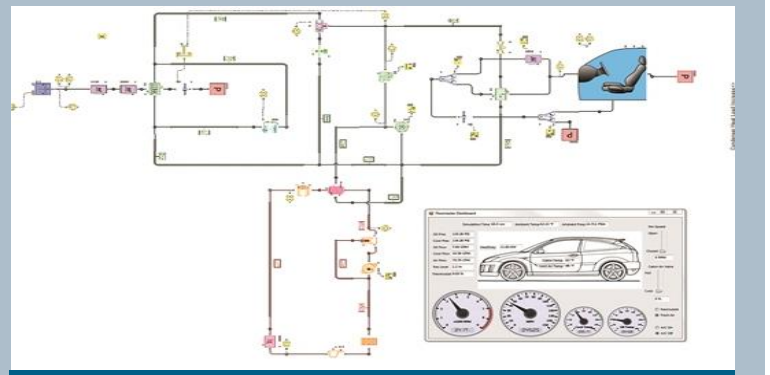


- **For every cubic foot per minute (CFM) that was sent through the heater core, there was a 1.5X CFM reduction in required front-end airflow**
- **This over design leads to higher drag and lower fuel economy for the everyday driver**

CSEG evaluates a novel dual-use heater core design with Flomaster



Heater core design change with added cooling door to the HVAC air box to help cool the engine



Simcenter Flomaster DUHC system simulation network

- The efficacy of this design intervention was computationally evaluated using the 1D thermo-fluid simulation software Simcenter Flomaster

"In automotive engine cooling, most manufacturers today have an over design problem. The front-end cooling pack is usually sized for an extreme driving condition, e.g. a hot day at 110° F (43° C) while towing a trailer of 3,000lbs or 5,000lbs (1,350kg – 2,300kg) and going up an extreme grade – a scenario that rarely happens."

Sudhi Uppuluri, Computer Sciences Experts Group