

PraVaHa software

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ISRO has developed **PraVaHa** (Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis), a **Computational Fluid Dynamics** (CFD) software, at its Vikram Sarabhai Space Centre (VSSC).



[ref-TH]

About PraVaHa:

- PraVaHa is designed to simulate both **external** and **internal flows** on various aerospace vehicles including launch vehicles, and **winged** and **non-winged** re-entry vehicles.
- This software plays a crucial role in understanding the **airflow** around these vehicles, which helps in optimizing their shape, structure, and **Thermal Protection System (TPS)**.
- It has already been utilized in the **Gaganyaan program** to analyze **human-rated launch vehicles** such as HLVM3 (Human rated Launch Vehicle Mark-3), Crew Escape System (CES), and Crew Module (CM).