

What is Agnibaan SubOrbital Technological Demonstrator (SOrTeD)?

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About Agnibaan SubOrbital Technological Demonstrator (SOrTeD)

- Agnibaan SOrTeD is a **single-stage launch vehicle powered by AgniKul's patented Agnilet engine**, which is an **entirely 3D-printed, single-piece, 6 kilonewton (kN) semi-cryogenic engine**.
- Unlike traditional sounding rockets that launch from guide rails, **Agnibaan SOrTeD will lift off vertically and follow a predetermined trajectory to perform a precisely orchestrated set of manoeuvres during flight.**
- **Features:**
 - It is a **customisable launch vehicle** that could be **launched in one or two stages**.
 - **The rocket stands 18 metres tall** and has a **mass of 14,000 kg**.
 - It is **capable of carrying payloads up to 100 kg to an altitude of 700 km in five different configurations**.
 - The rocket's **first stage could have up to seven Agnilet engines**, depending on the mission, which are **powered by Liquid Oxygen and Kerosene**.
 - The rocket is also **designed for launch from more than 10 different launch ports**.
 - To ensure its compatibility with multiple launch ports, **AgniKul has built a launch pedestal named 'Dhanush' that will support the rocket's mobility across all its configurations**.
 - The **Agnilet engine**, which powers the entire operation, is the **world's sole single-piece 3D-printed engine**.

Q1) What is a cryogenic engine?

A cryogenic engine is a type of rocket engine that uses cryogenic fuels, which are extremely cold liquids or gases stored at very low temperatures. Cryogenic engines are commonly used in space launch vehicles to achieve high levels of thrust and efficiency, particularly for sending payloads to distant orbits or interplanetary missions.

Source: [It's SOrTeD... Indian spacetechn start-up AgniKul one step closer to launching world's first 3D printed rocket into space](#)

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