



# India in Space Domain

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### India's Space Journey - Beginning

- 1962 - INCOSPAR estd. by Dr. Vikram Sarabhai
- 1963 - US supplied rocket **Nike-Apache** was launched at **Thumba** (Kerala)

### Early Days

- 1969 - **INCOSPAR** became **ISRO**
- 1975 -
  - India's first satellite - **Aryabhata** launched
  - Satellite Instructional Television Experiment (SITE)** launched
    - India's 1<sup>st</sup> major project; attempted to use technology as an educational tool
- 1980s - **INSAT series** and **SLV-3** launched
- 1994 - **PSLV** launched
- 2001 - **GSAT-1** (1<sup>st</sup> of the **GSAT series**) launched

*Mission Shakti (2019) – an Anti-Satellite Missile test jointly conducted by DRDO & ISRO to decimate satellites for pure military and strategic purpose*

*SSLV-D2 is ISRO smallest launch vehicle launched recently in 2023*

### India's Space Economy

- ~\$9.6 billion in 2020; expected to be **\$13 billion by 2025**
- Share - Govt (~20%), Media & entertainment (26%), Consumer & retail services (21%)

### 1<sup>st</sup> Space Age:

- Began in **1951** with launch of satellite **Sputnik 1** (by USSR)
- In **1961**, **Yuri Gagarin** became the world's 1<sup>st</sup> person in space

### 2<sup>nd</sup> Space Age:

- The current one where majority players are private companies
- 90% of global space launches** since 2020 are by and for pvt sector
- Year 2022 witnessed 180 rocket/space launches; **61** of them were by **SpaceX**
- Starlink** currently operates a **constellation of over 3,500 satellites**

### India & World Space Domain

- 6<sup>th</sup> largest player** in global space industry; ~**3.6%** of the world's space-tech companies (as of 2021)
- US holds leader's spot** (56.4% of all companies in space-tech ecosystem)
- Other top 5 players - **UK** (6.5%), **Canada** (5.3%), **China** (4.7%) and **Germany** (4.1%)

### Indian Pvt Companies

- Currently **100+** startups working in space domain
- Pace of investment - ↑ from \$3 million (2018) to \$65+ million (2021)

*With its **Vikram S** space launcher, **Skyroot Aerospace** became the 1<sup>st</sup> Indian pvt company to send a rocket into space*

### Initiatives for Pvt Sector Engagement

- IN-SPACE**
- NewSpace India Limited (NSIL)**
- Indian Space Association (ISpA)**



**Drishti IAS**

