



WHAT IS SPADEX?

- **Full Form:** Space Docking Experiment
 - **Objective:** Demonstrate autonomous **in-orbit docking technology** using small satellites.
 - **Significance:** Key for future **space station operations, satellite servicing, and interplanetary missions.**
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RECENT DEVELOPMENTS (2025)

- **Second successful docking** completed between:
 - **SDX-01 (Chaser)**
 - **SDX-02 (Target)**
 - **Launch Date:** December 30, 2024 (via PSLV-C60 from SDSC, Sriharikota)
 - **First Docking:** January 16, 2025
 - **Undocking:** March 13, 2025
 - **Second Docking:** April 2025 (re-docking event)
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TECHNOLOGICAL MILESTONE

- Demonstrates **spacecraft rendezvous** and **automated docking.**
- Places **India among elite nations** with this capability:
 - **USA**
 - **Russia**



- **China**
 - **India**
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STRATEGIC IMPORTANCE

- Foundation for:
 - **Satellite servicing**
 - **Crewed lunar missions**
 - **Bharatiya Antariksh Station (BAS)** – India's planned space station
 - Advances **deep space logistics** and **multi-launch coordination**
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INSTITUTIONS INVOLVED

- **UR Rao Satellite Centre** – Lead developer
 - Supported by:
 - **VSSC** (Vikram Sarabhai Space Centre)
 - **LPSC** (Liquid Propulsion Systems Centre)
 - **SAC** (Space Applications Centre)
 - **IISU** (Inertial Systems Unit)
 - **LEOS** (Laboratory for Electro-Optics Systems)
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FUTURE PLANS

- Continued experimentation in coming weeks to refine technology.
- Aim: Develop **cost-effective, small-satellite-based docking systems**.