

# International Cooperation for Small Satellite Development

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# CANEUS Background

- **A Worldwide Non-Profit Organization Serving the Needs of the Aeronautics, Space and Defense Communities by Fostering the Coordinated, International Development**
- **In achieving it's goal, CANEUS brings together Technology Developers, Aerospace End-Users, Governmental Policy Makers and Investors from Across the World**



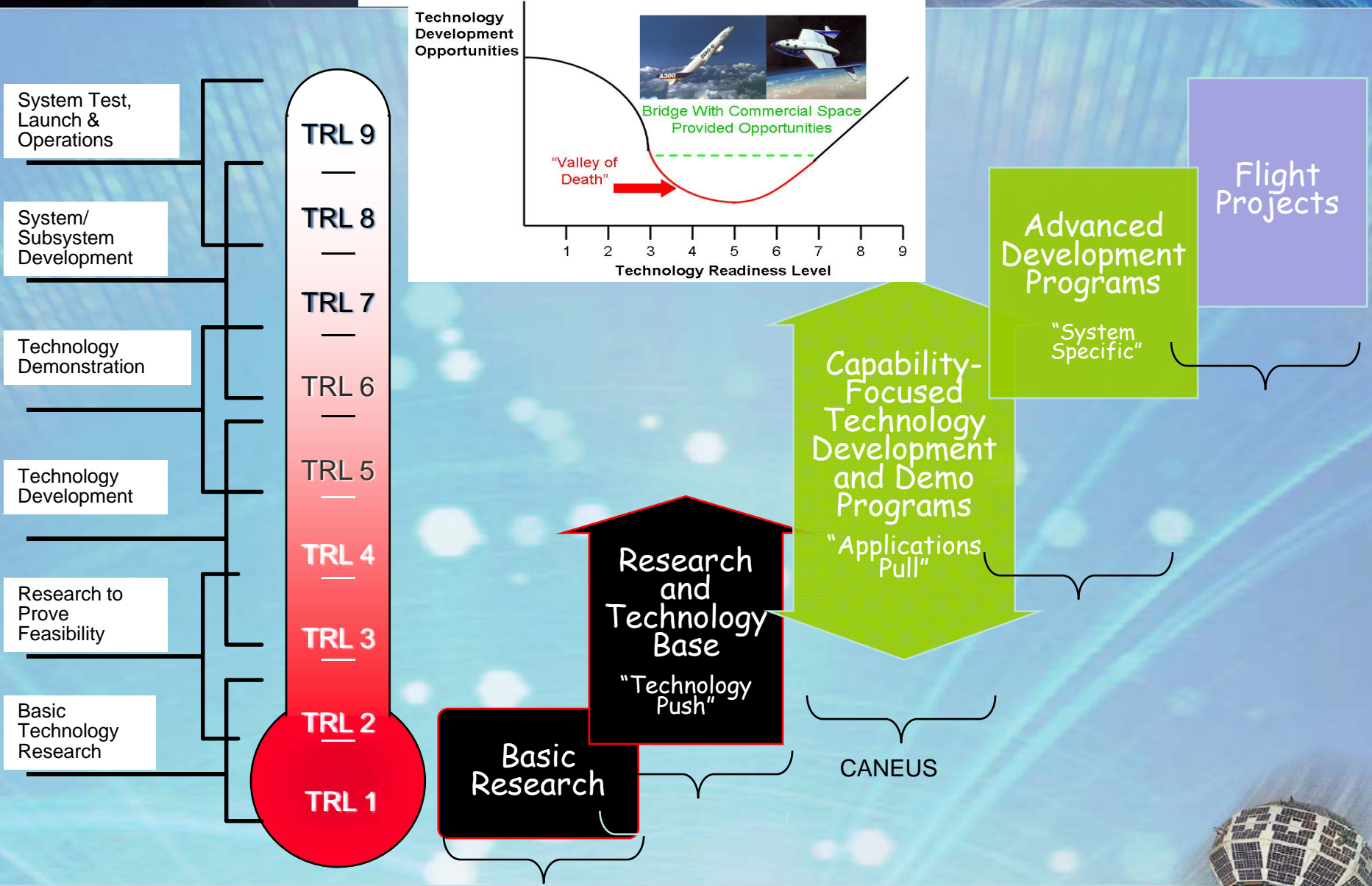
# CANEUS Background

## About CANEUS International

- A Global Non-Profit Corporation based in Canada
- Umbrella organization that manages the CANEUS universe: CANEUS USA Inc., CANEUS Europe Inc., CANEUS Asia (Japan) and proposed CANEUS Brazil (South America)
- Provides unified services to support CANEUS initiatives internationally



# 2. What We Do?



## **Specific Opportunities Exist for Participation in the CANEUS International Consortia's:**

- **Wireless for Aerospace**
- **Reliability for Aerospace**
- **Sensors and Devices for Aerospace**
- **Materials for Aerospace**
- **Small Satellites**
- **Micro Energy**



- Sub-critical government/private small satellite programs
- Very little **communication**: component and sub-system developers are not familiar with small satellite **end-user needs** and **customer requirements**
- Participants at CANEUS 2006 Conference: identified the need to create an international consortium for the **coordination and standardization** of the small satellite industry



- CANEUS International
- CANEUS has formed several sector consortia, one of which is the CANEUS Small Satellite Sector Consortium
- Meetings:
  - Toulouse, France (2006)
  - Montreal, Canada (2006)
  - Littleton, Colorado, USA (2007)
  - El Segundo, California, USA (2008)
  - Logan, Utah, USA (2008)
  - **Sao Paulo, Brazil (November 2008)**



- Members collaborate to establish how the small satellite industry can **respond to low TRL, emerging technologies in support of mission or product requirements**
- **Build on the Growth** of the small satellite market
- Provide **business and investment** opportunities
- **Facilitate dialogue**
- Establish **cooperative relationships**
- Today, comprises agency and industry representatives from Canada, Europe, USA, Brazil, Japan and other parts of the world





- Takes an approach similar to that designed for the semiconductor industry by SEMATECH
- Oversees **5 projects and initiatives** dedicated to
  - (a) developing **standards** so as to ensure international interoperability
  - (b) identifying **launch opportunities** and **services**
  - (c) providing **stakeholder liaison** and strategic development
  - (d) addressing **Intellectual Property** and **export control** (ITAR) issues in accordance with CANEUS International's broader mission, and
  - (e) organizing **launch certification** services.
- Participants can:
  - decrease manufacturing costs
  - increase reliability and productivity
  - enjoy increased access to customers, end-users, and the global market



- **Purpose:** To provide a platform for developing satellite subsystems standards to insure **interoperability** among international partners.
- This will result in small satellites that are **less expensive** to develop and that require a **shortened development time to launch**.



- **Purpose:** To establish a set of specifications consistent with a variety of launch systems and to **ensure the compatibility of secondary payloads** with these specifications.
- The subgroup aims to provide secondary satellite developers with a **current list of candidate launches** detailing carrier type, carrying capacity, and key contact information.



- **Purpose:** To **bring together** all the stakeholders, individuals, and organizations that could **benefit** from a sustainable small satellite industry sector; to **identify and prioritize** the key **technology** elements required for the small satellite sector, and to **develop and maintain** the supply chain **infrastructure**.



- **Purpose:** To leverage the consortium community and develop a **streamlined support mechanism** for addressing intellectual property issues.
- One focus will be related to **patent** related technology development, while the other effort will address the formal process on handling **International Traffic in Arms Regulations (ITAR)** and **Export Administration Regulations**.



- **Purpose:** To provide launch certification services.
- Many launch organizations and government customers will require a certification sign off process. This initiative will compile a **list of certification organizations** and facilitate the introduction and **interactions**.



- CANEUS' sector consortia are spawned by project concepts so **far-reaching** that they require a broad program of initiatives, developments, and industry **coordination**.
- The cost- and risk-mitigating rationale behind CANEUS International's activities translates into a project matrix that seeks to recognize and benefit from the **overlapping interests and needs** of stakeholders operating within various sector consortia.



- Within this framework, the CANEUS Small Satellite Sector Consortium currently operates in collaboration with **four other consortia**.
- This enables the **sharing of benefits** with projects and initiatives undertaken in MNT **reliability testing** (“Reliability”), developing **wireless alternatives** (“Fly-by-Wireless”), responding to aerospace needs for **harsh environment sensors** (“Devices: Harsh Environment Sensors”), and more.





