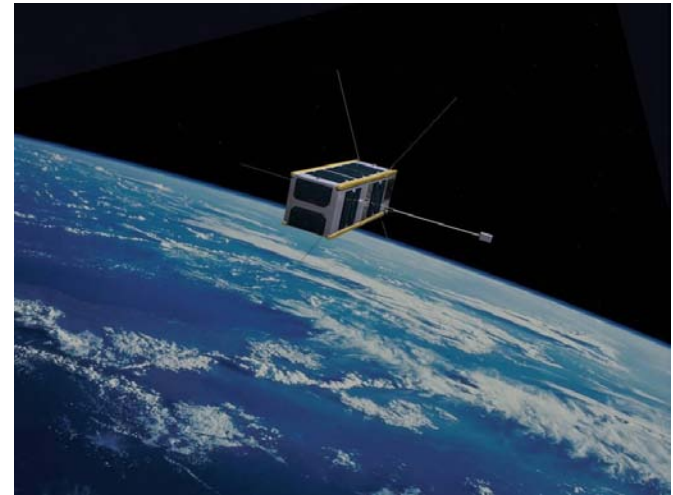


# Communications Exchange for Research and Experimental Satellites (CERES)

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# Mission

- A non-profit consortium to initialize and maintain a RF communication data market between experimental and research satellite operators and ground station operators



*Image credit: ClydeSpace*

# Structure

Periodic *experimental* frequency applications and management

Bring own funds for membership

Supervisory Board: Experts

**Members:** Board-approved satellite operators with active flight projects

Membership\* rate levels:  
 Level 3: 100 Mb per year  
 Level 2: 1000 Mb per year  
 Level 1: 1+ Gb per year

Academia

Amateurs

Gov't.

Industry

\* See clarification on rules for different member groups and frequency bands

Gov't seed funding for membership, competitively selected by board

Consortium

Issue RFPs

Award Contracts \$

Submit Proposals

Deliver Data

Gov't seed funding for GS development

Ground Station Operators

Academia

Amateurs

Gov't.

Industry

## \*Membership rate structure/rules

Academia	Amateurs	Government	Industry
No membership fee on amateur bands	No membership fee on amateur bands	No access to amateur bands?	No access to amateur bands?
Standard membership on experimental bands	Standard membership on experimental bands	Standard membership for experimental bands	Standard membership for experimental bands
Ground stations can only be awarded contracts on experimental bands (not amateur)	Ground stations can only be awarded contracts on experimental bands (not amateur)	Gov't. membership for gov't. bands	
		Ground station contracts	
		Additional security requirements	

- *(Needs work/revision)*

# Requests for Proposals

- CERES will release RFPs to Ground Station Operators
  - RFPs based on member usage needs
    - Data rates
    - Contract duration
    - Geographic location
    - Passes per day (orbit information if possible)
    - Frequencies
    - Security
- Membership rates will reflect market value based on submitted proposals
  - Gov't. initial seed funding / subsidy

# Standardization

- CERES will streamline frequency licensing process for members.
- CERES will shape hardware development (but not own hardware) by driving experimental frequency allocations for both member/GS operator use.
- CERES will shape ground station data interface development (standards for data delivery).

# National Interest

- Creating CERES and operating it smoothly is in the national interest for security and technology development.
  - STEM education
    - Seed funding can sponsor students to work with GS operators or at Member/GS data interface
  - Emergency and disaster support
    - Existence of consortium can benefit real-time coverage needs during natural or other disasters