



Nano-satellite Constellation Mission Idea Contest

- Nanosat Constellation Mission Design Contest
- Sponsored by Axelspace, etc.

What

Are the ground rules

- Eligibility
 - Any individual, group or company with suitable space systems expertise and an enthusiasm for nanosats
- Requirements
 - Exploitation of Nanosats e.g. Individual free-flying satellites typically ≤ 15 kg
 - Exploitation of a constellation = a synergistic collection of 2 or more satellites providing a common service or multi-point data.
 - Mission capable of $< \sim 2$ yr development time with total lifecycle cost $< \sim \$6$ M (excluding launch)
- Assumptions
 - Single, Secondary launch to Earth orbit to achieve initial operational capability

Why

a contest

- Encourage innovative exploitation of nanosats in constellations to provide useful and sustainable capabilities, services or data

Why

you should participate

- Finalists will be invited to present in Japan at the 2nd Nanosat symposium
- Award 1st prize: 500,000 JPY , 2nd prize: 300,000, 3rd prize: 200,000
- Best papers published in a peer-reviewed journal: e.g. *Acta Astronautica* or *Journal of the British Interplanetary Society* (TBR)
- High visibility for your ideas, potential for future collaboration and support

When

contest timeline

- June 2010: Announcement of Contest Details
- July-September 2010: Regional seminars to introduce the competition details in each region:
- December 20, 2010: Submission Deadline
 - Evaluation by reviewers: Dec.20 – Jan.20
- January 2011: Announcement of Finalists
 - Each team of finalists shall prepare formal paper describing their proposed idea (detailed guidelines to be provided)
 - One representative from each team of finalists will be invited to Japan (expenses paid) to participate in the final presentation stage.
- March 1, 2011: Submit final papers for review
- March 14, 2011: Final Presentations and selection of winners in Tokyo

How to apply

- Submit extended abstract not to exceed 5 pages (in English) no later than 20 Dec describing:
 - Need your mission idea addresses
 - Prioritized list of Mission objectives
 - Concept of operations (description of key mission elements and their interfaces)
 - 3-5 Key Performance Parameters (e.g. Resolution, data rate, coverage)
 - Space segment description (conceptual design, e.g. Mass, volume, power,link budget, orbit)
 - Implementation plan (estimated cost and schedule, infrastructure requirements)
 - Detailed instruction for submissions to be found on website
- Work with your regional coordinators for assistance
- If selected as finalist, prepare and submit final paper and presentation for 2nd Nanosat Symposium in Tokyo March 2011

Who

will review

- Prof. Shinichi Nakasuka, University of Tokyo
- Prof. Sir Martin Sweeting, Executive Chairman, SSTL, and Director, Surrey Space Centre
- Dr. Rainer Sandau, Deutsches Zentrum für Luft und Raumfahrt e.V. (IAA, formerly DLR)
- Prof. Herman Steyn, Stellenbosch University
- Dr. Masaya Yamamoto, Weathernews Inc.
- Dr. Jerry Sellers, Teaching Science & Technology, Inc.
- Prof. Hiroshi Kawahara, Cyber University

How

we will review

- Original, sustainable Nanosat mission idea
 - Novel mission concept not yet realized or proposed, or a new implementation of an existing capability or service
 - This is not intended to be a single mission but rather an on-going application providing a continuous useful capability
 - Impact on society
- Mission Feasibility
 - Technical
 - Programmatic (cost estimate, development schedule, infrastructure requirements)
 - Operational (Description of ground segment and communications architecture, e.g. planned use of existing infrastructure)

Good Luck!