To: All MIC Participants
Subject: General Feedback

Dear MIC Participant

Thank you for your participation in this first-ever nanosatellite mission idea contest (MIC). The MIC committee was overwhelmed by the number, variety and overall quality of all submissions. While we wish we could provide individualized feedback to each participant team, with over 60 applicants and only a small number on the committee this simply isn't feasible. Instead, this letter is intended to highlight best practices of the most successful applicants and we hope it will serve to guide you in any future pursuit of your nanosatellite ideas either through this contest or other venues.

This feedback is organized by topical area and provides examples and explanations of the best approaches for writing abstracts in each.

Organization and Technical Writing

The best submissions broke their abstract into clear topical areas making it easier for reviewers to find and understand the critical information. The MIC committee realizes that for most applicants, English is not their native language. However, the better applicants made a big effort to clear up grammatical and other technical writing problems making the abstract easy to read and the main points easy to grasp. Even if no one on your team has this level of expertise in English writing, it is suggested that you seek out someone from your organization outside of your team who can proof-read and provided suggestions for wording. Realize that it takes time to fully proof-read and correct even a few page abstract so additional time must be budgeted for this.

Originality

Space operations are only 5 decades old, so virtually anything done in space is relatively new. However, since the point of the contest is recognize good ideas, these ideas must be novel or unique in some way, especially within the constraints of a nanosatellite and leveraging the advantages of a constellation. The best ideas submitted were not necessarily completely new or radically different from missions that have come before. However, the best abstracts successfully communicated their understanding of how their mission idea fit within the context of missions that have come before and how they contributed to technical or other advances in the area.

Impact

By their nature, nanosatellites offer the opportunity to do great things in small packages. Certainly there is no expectation that any given nanosatellite mission may change the world, but the most successful applicants were able to explain how their mission would have measurable positive humanitarian, scientific or economic benefits that would justify the financial and programmatic investment needed to conduct the mission.

## Sustainability

In the area of sustainability, the most successful applicants made a case for a mission that was not simply a "one off" demonstration of a single concept or capability. They were able to argue why their mission, or in some cases their pathfinder mission, was a stepping stone toward demonstrating a capability with sufficient benefit to the community (humanitarian, scientific or economic) to justify continuation for many years or over several missions.

## Technical Feasibility

The strongest applications demonstrated: 1) a firm grasp of the technical requirements for the mission, 2) an understanding for the state of the art in spacecraft payload and bus performance, and 3) explained how their mission could meet the technical requirements given the state of the art with reasonable risk.  The best abstracts described the technical aspects of their missions in precise terms and with demonstrable calculations to convince the reviewers that they had applied space mission engineering principles with some rigor.  For example, if the mission required a high pointing accuracy or spatial resolution, then the best applications explained how this could be achieved within the constraining package of a nanosatellite given currently available or near-term technologies.

## Programmatic

The most successful applications could show a well-planned path to develop and implement their mission idea within the context of their own or other existing organizations and infrastructure.  A reasonable schedule and justifiable budget were important to demonstrate the programmatic feasibility of the mission. From a budget standpoint, the most thorough cost estimates accounted for labor and operations, not simply component costs which are historically a relatively small fraction of overall lifecycle cost.

## Operations

Successful applications carefully considered the entire concept of operations (ConOps) within the mission lifecycle. The best ConOps addresses mission operations systems (ground infrastructure) as well as long term command and control methods and implementation.  Assumptions to use existing infrastructure comes with a need to address the key interface issues, both technical and programmatic.

The MIC committee recognizes the challenges of addressing all of the above points in a 5 page abstract. However, the best abstracts were able to balance their discussion in each of these areas to demonstrate an overall understanding of all aspects of the proposed idea.  We welcome your participation in the Mission Idea Contest and hope you will continue to pursue your goals of space exploration in the future!

\<Signed\>
MIC Committee