



Nano-satellite Constellation
Mission Idea Contest



Axelspace Corporation, Japan
www.axelspace.com



The University of Tokyo
Department of Aerospace Engineering
Intelligent Space Systems Laboratory
www.space.t.u-tokyo.ac.jp



The University of Cairo
Faculty of Engineering
Department of Aerospace Engineering
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As of November 2010

Regional Activities of Mission Idea Contest Coordinator

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and

Mission Idea Contest Regional Coordinator
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Table of Contents

- Table of Contents2
- List of Tables and Figures3
- Nomenclature4
- Introduction.....5
 - Reviewers5
 - Regional Coordinators6
- EGYPT-MENA Regional activities7
 - Communication7
 - Seminars7
 - Appointments.....8
 - MIC Web Site8
- Conclusion and Recommendation8
- Acknowledgement9
- References9
- Appendix A10
- Appendix B11
- Appendix C13
- Appendix D14

List of Tables and Figures

Table 1 MIC Reviewers	5
Table 2 MIC Regional Coordinators	6
Figure 1 Regional coordinator world wide distribution; ★ Regional coordinator location [1]....	7

Nomenclature

GUC	German University in Cairo
E-JUST	Egypt-Japan University of Science and Technology
ISSL	Intelligent Space System Laboratory
MENA	Middle East and North Africa
MIC	Mission Idea Contest

Introduction

Mission Idea Contest is focused mainly on the constellation of nano-satellites to achieve the following objectives:

- 1) Envision a new sustainable space mission using nano-satellite constellation.
- 2) Explore a new possibility of nano-satellite constellation to solve common problems facing humanity

Nano-satellite is a low cost, short development time satellite of less 50 kg with a reasonable reliability. Constellation is a formation of multiple satellites in earth orbit for a single mission. A constellation will provide satellite users with various merits such as higher time resolution, overall system robustness, wider coverage, etc. More information about the contest can be found in [1].

Mission Idea Contest (MIC) is international contest organized by Axelspace Corporation and sponsored by Intelligent Space System Laboratory, Aerospace Engineering Department at the University of Tokyo. There are 18 MIC regional coordinators located in 16 countries. The main mission of these coordinators is to act as facilitators for those who want to apply to the MIC by explaining the MIC objectives, guidelines and answer questions and concern to interested people. This report will summaries the activities for the Egypt-MENA regional coordinator's activities from the contest launching in June 2010 until November 2010 (about three weeks before the submission deadline, 20th December 2010). Seven reviewers will decide the top 5-10 ideas out from the total number of the submitted idea.

Reviewers

The Seven MIC reviewers are listed in the following table:

Table 1 MIC Reviewers

No.	Name	Affiliation	Country
1	Shinichi Nakasuka, Proferssor	The University of Tokyo	Japan
2	Sir Martin Sweeting, Professor	SSTL, SSC	United Kingdom
3	Rainer Sandau, Ph.D.	DLR	Germany
4	Herman Steyn, Professor	Stellenbosch University	South Africa
5	Masaya Yamamoto, Ph.D.	Weathernews Inc.	Japan
6	Jerry Seller, Ph.D. (Reviewers Chair)	Teaching Science & Technology Inc.	USA

7	Hiroshi Kawahara, Professor	Cyber University	Japan
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Regional Coordinators

The eighteen regional coordinators are listed in the following table:

Table 2 MIC Regional Coordinators

No.	Name	Affiliation	Region
1	Mohammed Khalil Ibrahim	Cairo University	Egypt and MENA
2	John Mugwe	Afrosoft	Kenya
3	Low Kay Soon	Nanyang Technological University	Singapore
4	Marco Schmidt	Würzburg University	Germany
5	Hyochoong Bang	KAIST	Korea
6	Esaú Vicente Vivas	Instituto de Ingeniería, UNAM	Mexico
7	Fernando Stancato	University of São Paulo	Brazil
8	Fernando Agelet	University of Vigo	Spain
9	Jordi Puig-Suari	CalPoly	USA
10	Roland Coelho	CalPoly	USA
11	Andres J. Arenas	Universidad de la Fuerza Armada UNEFA,	Venezuela
12	Robert van Zyl	Cape Peninsula University of Technology	South Africa
13	Pham Anh Tuan	STI, VAST	Vietnam
14	Seiko Shirasaka	Keio University	Japan
15	Vidmantas Tomkus	Lithuanian Space Association	Lithuania
16	Hector Bedon	National University of Engineering	Peru
17	José Olíden	National University of Engineering	Peru
18	A. Rüstem Aslan	Istanbul Technical University	Turkey



Figure 1 Regional coordinator world wide distribution; ★ Regional coordinator location [1]

EGYPT-MENA Regional activities

Communication

Communication with potential applicant was taken place by both email and conventional mail to inform them about the MIC and keep them updated about the MIC news and MIC web site update. The following list includes (but not limited to) space agencies, universities and research centers which are informed about the MIC by Egypt-MENA Regional Coordinator:

1. The University of Cairo, Egypt
2. Egypt-Japan University of Science and Technology (E-JUST), Egypt
3. German University in Cairo (GUC), Egypt
4. Zagazig University, Egypt
5. Assiut University, Egypt
6. Alexandria University, Egypt.
7. National Authority for Remote Sensing and Space Science (NARSS), Egypt
8. King Fahd University of Petroleum & Minerals, Kingdom of Saudi Arabia
9. King Abdulaziz city for science and technology, Kingdom of Saudi Arabia
10. King Saud University, Kingdom of Saudi Arabia
11. Agence Spatiale Algérienne, Algeria
12. Emirates Institution for Advanced Science and Technology, United Arab Emirates.
13. Others

Continuous communication with key persons in the above mentioned list as well as others potential applicant have been taken place by emails to remind them about the deadline which is 20th December 2010.

Seminars

Basically two seminars were given by the coordinator and held at the premises of Aerospace Engineering Department, Faculty of Engineering, Cairo University. The first seminar was held on 21st June 2010 just two weeks after the 1st Nano-satellite symposium and the announcement of the MIC in Tokyo. This seminar was basically dedicated to the staff members of Aerospace Engineering Department, Faculty of Engineering, Cairo University. In addition to the MIC presentation in this seminar, activities that occurred during the regional coordinators visit from 9th-18th June 2010 was also presented which include 1st Nano-satellite

symposium, Wakayama tour and Hayabusa re-entry. Photos taken during this seminar are shown in Appendix A.

The second regional seminar was hold on 2nd August 2010. Space agencies, universities and research centers in Egypt and MENA was informed about this seminar as well as MIC prior to this seminar (July 2010). The seminar was hold at the premises of Aerospace Engineering Department, Faculty of Engineering, Cairo University. At least twenty researches, graduate students, and undergraduate students attended this seminar in addition to about ten staff members from the Aerospace Engineering Department. Photos during this seminar are shown in Appendix B. Attendance list written by the attendees themselves is also presented in Appendix C (Not included the Aerospace Engineering Department Staff members). Concern about protecting the applicant idea and the remaining limited time were discussed in the seminar. The young researchers express their desire to join the contest to present their ideas.

Appendix D shows a sample letter of the invitation letters which were sent (in electronic and hardcopy format) to space agencies, universities and research centers in Egypt and MENA along with the official MIC flyer before and after the second seminar.

The coordinator also constructed a face book page for MIC (www.facebook.com) before the seminar. At least 37 members join this page. Email list was constructed to keep the MIC interested persons informed about the MIC news and web page update.

Appointments

The Egypt-MENA coordinator was contacted by several researchers interested in MIC by phone and emails. Several private appointments arranged to present the MIC to the interested researches and to answer their questions.

MIC Web Site

The Mission Idea Contest web site is a vital element in the MIC presentation efforts to many individuals and institutes. It also serves as information and news portal to regional coordinators as well as to the interested individuals. MIC regional coordinators were given the chance to give their opinion about the site design and layout as well as they were asked to review some of the published material in the site.

Conclusion and Recommendation

Activities of the Egypt-MENA regional coordinator is presented in this report. The activities were focused on the Egypt and some of the neighboring countries in MENA area. Seminars and appointments were focused in Egypt. The MIC website plays a vital role during the contest period but still we have to assess the overall performance of coordinators efforts after the final presentation taking into consideration the size of space-related communities in this region. Young researches get very much motivated by such contest and express their desire to apply for this contest. The regional coordinator is recommending continuing MIC on yearly basis to promote more research and development efforts for Nano-satellite constellation. The Egypt regional coordinator recommend also to focus on Egypt in the future as Egypt is one of the highest population country in the region and became part of the world. This may be achieved by incorporating it as UNISEC branch and/or one of Tokyo university, ISSL, ground station network. This will increase the number of interested researchers in the areas of Nano-satellites and space-related research and development.

Acknowledgement

Egypt-MENA regional coordinator express his gratitude to both Professor Shinichi Nakasuka, head of Intelligent Space System Laboratory, Aerospace Engineering Department, The University of Tokyo and Ms. Rei Kawashima, Chief Marketing Officer of Axelspace Corporation for their continuous support and advice during the contest period. The above mentioned activities couldn't be possible without their continuous support and help. The regional coordinator express his gratitude also to both Axelspace corporation staff as well as UNISEC Japan for their kind help and support during his visit to Japan from 9th-18th June 2010.

References

1. <http://www.axelspace.com/missionideacontest/index.html>

Appendix A

Photos taken during the first seminar at Aerospace Engineering Department, Cairo University on 21st June 2010 at 12:30 AM.



Appendix B

Photos taken during the second seminar at Aerospace Engineering Department, Cairo University on 2nd August 2010 at 11:30 AM.





Appendix C

MIC seminar attendance list on 2nd August 2010



Cairo University
School of Engineering
Aerospace Engineering Department
Mission Idea Contest
First Regional Seminar in Egypt
2nd August 2010: 1F Lecture Hall at 11:30AM -

Attendance List

Ser. No.	NAME	Affiliation
1	Mohammed Ezzat	Cairo University
2	Ahmad mohammed Abdulrahman	Cairo University
3	Mohamed samir ettahan	cairo university
4	Peter Safwat Bakhoum	Cairo University
5	Hassan Aly Hassan	Cairo university
6	Khaleda / Giza George	Cairo University
7	Amr Muhammad Metwally	Cairo University
8	Ragy Mohamed Elsaied	Egyptian Aviation Academy
9	Ahmed Anwar Ali	TA, Aerospace dept Cairo University
10	Islam samir Saad	Aerospace dep. Cairo Univ.
11	Samy Mohamed Amin	AE - Cairo Univ.
12	Yasmin Abdelnaby	Cairo Univ. AE
13	Mahmoud Youssef Mohamed	Cairo Univ.
14	Omar Magdy ElBoughdely	Cairo university
15	Ahmed Mohamed Samir	Cairo University
16	Peter Louis Bishay	Cairo Univ.
17	Haithem Ezzat	Cairo University

Appendix D

Sample of the invitation letter which was sent by both email and conventional mail to the potential applicants. Official MIC flyer was attached to this letter in electronic and/or hardcopy format

CAIRO UNIVERSITY
Faculty of Engineering



جامعة القاهرة
كلية الهندسة
قسم هندسة الطيران والفضاء

AEROSPACE DEPARTMENT

Wednesday, September 01, 2010

Attn: Ms. Rei Kawashima
401 Tokatsu Techno Plaza, 5-4-6 Kashiwanoha,
Kashiwa City, Chiba, 277-0882, Japan
TEL/FAX: +81-(0)4-7170-0490

Dear Rei-san

It is my personal honor to invite your esteemed institute and all researchers who interested in nano-satellite R&D to join and apply to the Mission Idea Contest organized and sponsored by both Axelspace Corporation (<http://www.axelspace.com/>) and Intelligent Space System Laboratory at Tokyo University (http://www.space.t.u-tokyo.ac.jp/riab/index_e.html).

Mission Idea Contest is focused mainly on the constellation of nano-satellites to achieve the following objectives:

- 3) Envision a new sustainable space mission using nano-satellite constellation.
 - 4) Explore a new possibility of nano-satellite constellation to solve common problems facing humanity
- Important dates, prizes, FAQ and much more information about the Mission Idea Contest can be found in the following web site:

<http://www.axelspace.com/missionideacontest/>

We are looking forward for your institute participation in this contest event for the sake of humanity.

I am serving as regional coordinator for North Africa and Middle East and I will be more than happy to answer all your questions. I will do appreciate if you could forward this email and information to the interested researchers and engineers at your esteemed institute.

Should you have any questions please don't hesitate to email me at anytime.

Sincerely yours,

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