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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
www.eng.cu..edu.eg

As of May 2012

Regional Activities of Second Mission Idea Contest (MIC2) Coordinator

Prepared by:

Mohammed Khalil Ibrahim
Associate Professor of Aerospace Engineering,
Department of Aerospace Engineering,
The University of Cairo

and

Mission Idea Contest Regional Coordinator (Egypt and MENA).

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Nomenclature

GUC German University in Cairo

E-JUST Egypt-Japan University of Science and Technology

IAA International Academy of Astronautics
ISSL Intelligent Space System Laboratory

MENA Middle East and North Africa
MIC1 First Mission Idea Contest
MIC2 Second Mission Idea Contest

UNISEC University Space Engineering Consortium

Introduction

The Mission Idea Contest (MIC) was established last year to provide aerospace engineers, college students, consultants, and anybody interested in space with opportunities to present their creative ideas and gain attention internationally. The primary goal of MICs is to open a door to a new facet of space exploration and exploitation.

Development of micro/nano-satellites started as an educational and research program primarily at university laboratories. As the micro/nano-satellite technology matures, it have spread rapidly across the academics and industry for practical application.

The first Mission Idea Contest (MIC1) was started in mid 2010 and organized by UNISEC, Axelspace Corporation and the University of Tokyo. MIC1 focused mainly on mission idea and satellite design for of nano-satellite constellation. For more details about this contest the reader is encouraged to read reference [1].

In The 2nd Mission Idea Contest (MIC2), organized by UNISEC and the University of Tokyo, calls for ideas in two categories:

- 1- Mission idea and Satellite Design Category or Category 1
- 2- Business Model category of Category 2

Table 1 summarizes the basic differences between MIC2 and MIC1.

Table 1 Basic difference between MIC1 and MIC2

	1 st MIC	2 nd MIC
Satellite mass	< 15 kg	<50 kg
Number of satellites	2 or more than 2 (constellations only)	1 or more than 1 (no requirement for constellations)
Category	Only 1 category:	2 categories:
	Mission idea for nano- satellite constellation	Mission idea and satellite design
		Mission idea and business model

Reviewers

In MIC1 there were seven reviewers as listed in the Table 2. This number increased to eleven reviewers in MIC2 (60% increase in the review team). The additional four reviewers names, affiliation and country in listed in Table 3. The review team was divided into three sub-teams. The first team will evaluate category 1 ideas (technical category). The second sub-team will review category 2 ideas (business model category) and the third and last sub-team will evaluate the technical idea for IAA award.

Table 2 MIC Reviewers as of December 2010

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 &	UŚA
	•	Technology Inc.	
7	Hiroshi Kawahara, Professor	Cyber University	Japan

Table 3 MIC Reviewers joined after December 2010

No.	Name	Affiliation	Country
1	Prof. Mitsuru Osaki	Professor, Hokkaido University	Japan
2	Dr. Masami Takai	INVENIO Co. Ltd.	Japan
3	Mr. Takeshi Motohashi	MIT Enterprise Forum of Japan, NTT, Tokyo Univ. of Science	Japan
4	Dr. Yasushi Horikawa	Tokai University Japan Aerospace Exploration Agency (JAXA)	Japan

Regional Coordinators

The number of regional coordinators during MIC2 is increased by almost 100%. Originally there were 16 regional coordinators covers 16 countries, as shown in Table 4. Currently there are 33 regional coordinators covers 33 countries, as shown in Table 4 and Table 5.

The main mission of these coordinators is to act as facilitators for those who want to apply to the MIC2 by explaining the MIC2 objectives, guidelines and answer questions and respond to the concern to interested people. The present report will summarize the activities for the Egypt-MENA regional coordinator's activities during the second mission idea contest from August 2011 until May 2012.

Table 4 MIC Regional Coordinators as of December 2010

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 and	CalPoly	USA
	Roland Coelho		
10	Andres J. Arenas	Universidad de la Fuerza Armada UNEFA,	Venezuela
11	Robert van Zyl	Cape Peninsula University of Technology	South Africa
12	Pham Anh Tuan	STI, VAST	Vietnam
13	Seiko Shirasaka	Keio University	Japan
14	Vidmantas Tomkus	Lithuanian Space Association	Lithuania
15	Hector Bedon & José Olíden	National University of Engineering	Peru
16	A. Rüstem Aslan	Istanbul Technical University	Turkey

Table 5 MIC regional coordinators joined after December 2010.

No.	Name	Affiliation	Region
1	Regina Lee	York University and Larry Reeves,	Canada
	_	Geocentrix Technologies	
2	Tsolmon Renchin	National University of Mongolia	Mongolia
3	Jyh-Ching Juang	National Cheng Kung University	Taiwan
4	Jose E. Aban	Universiti Brunei Darussalam,	Brunnei
5	Kamel Besbes	Faculty of Sciences of Monastir	Tunisia
6	Willy Ricardo Cabañas	Central American Association for	Guatemala
	Villagrán	Aeronautics and Space	
7	Naomi Mathers	The Victorian Space Science	Australia
		Education Centre (VSSEC)	
8	Cem O. Asma	The von Karman Institute for Fluid	Belgium
		Dynamics	_
9	Sotir Sotirov	Burgas University and Vesselin	Burgaria
		Vassilev	-
		CASTRA	
10	Nnadih S. Ogechukwu	African Regional Center for Space	Nigeria
	_	Science & Tech. Education	-
11	Igor V. Belokonov	Samara State Aerospace University	Russia

12	Sawat Tantiphanwadi	National Science and Technology Development Agency (NSTDA)	Thailand
13	Velibor Vukasinovic	The Cluster of Serbian Aeronautical Industry – UVIS	Serbia
14	G.M. Tarekul Islam	Bangladesh University of Engineering and Technology	Bangladesh
15	Smita Francis	Polytechnic of Namibia	Namibia
16	Manfred Quarshie	KNUST and ANUC	Ghana
17	Ariel C. Blanco and Rosario Ang	University of the Philippines	Philippines

Figure 1 shows the geographical distribution of regional coordinators in both MIC1 and MIC2. It is clearly shown that the increase is well distributed world continents.



a) First Mission Idea Contest (MIC1)

b) Second Mission Idea Contest (MIC2)

Figure 1 Regional coordinator worldwide distribution

Awards

The following awards and prizes are offered for the MIC2:

- 1st and 2nd place in category 1 (Mission Idea and Satellite Design)
- 1st and 2nd place in category 2 (Mission Idea and Business Model)
- IAA Award: for environmental issues the most imaginative application of micro/nano satellite technologies to environmental issues for the benefit of humankind
- Student Prize (for category 1): the best proposal in Category 1 (Mission Idea and Satellite Design) submitted by a student, a student group or a University with involvement of a significant number of students

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 updates. Appendix A lists of potential applicant in Egypt and MENA region which includes (but not limited to) space agencies, universities and research centers

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 was on 1st May 2012 and extended for 10 days to be on 11th May 2012.

Seminars

Basically four seminars were given by the coordinator. Three out of four seminars were given through internet. The institutes which hosted the seminars are as follows:

- 1. King Fahd University of Petroleum and Minerals (KFUPM), KSA on 3rd December 2011 (photos are shown in Appendix B)
- 2. Al-Azhar University on 9th February 2012 online seminar.
- 3. Department of Aerospace Engineering, Cairo University on 16th February 2012 online seminar (photos are shown in Appendix C)
- 4. Algerian Space Agency on 22th February 2012 online seminar

Prior to the seminar very informative and extremely useful presentation material was send by UNISEC to all MIC coordinators which help so much in the preparation for the seminar. For online seminar a state of the art internet video conferencing application called Centra at KFUPM was used.

Attendance in the online seminar showed strong interest in the contest. This was reflected in authors of the submitted idea as well as from their questions and continuous communications.

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 the seminars announcement. Specific seminar dates were announced through the MIC official web site [2].

Appointments

The Egypt-MENA coordinator was contacted by several researchers interested in MIC2 by phone and emails. Several private appointments arranged to present the MIC2 to the interested researches and to answer their questions.

Live Q&A Internet Sessions

In MIC2 a new service was offered to the applicants by the regional coordinator which was a live Q&A intrenet session on every Wednesday from the beginning of February until the end of April for one hour (From 4:00 PM – 5:00 PM Cairo local time). The state of the art internet video conferencing application (Centra) at KFUPM was used for this live Q&A sessions. Instruction about using this service was send to potential applicant and shown in Appendix E.

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

Results and Recommendation

Figure 2 shows the number of submitted MIC2 applications from different region. Egypt and MENA region submitted a total of 7 applications (four for Category 1 and three for Category 2) which is about 10% of the total submitted applications (72 applications).

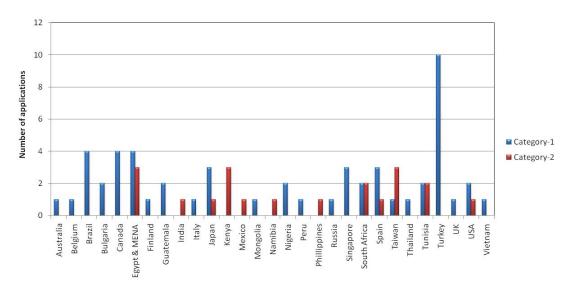


Figure 2 The submitted applications distribution by region

The experience gained during MIC1 was vital for the regional coordinator during MIC2 and we hope it will be reflected in the quality of the submitted ideas. Current political changes in Egypt affected both the applicants to apply and regional coordinator performance and it was challenging to keep the potential applicant motivated and encourage them to apply. Compared with other countries in the region Egypt seems to have a strong potential for space development and applications.

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, Secratury General of UNISEC Japan 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 all staff members of UNISEC Japan for their kind help and support.

References

- 1- Rei Kawashima, Alim Rustem Aslan, Fernando Stancato, Héctor Bedón Monzón, John Mugwe5, Mohammed Khalil Ibrahim, Vidmantas Tomkus, Esaú Vicente Vivas, Fernando Aguado-Agelet, Seiko Shirasaka, Robert van Zyl, Shinichi Nakasuka, "Results and Future Perspectives of the Mission Idea Contest", 3rd Nano-satellite symposium, 13-15 December 2011, KitaKyushu, Japan.
- 2- www.spacemic.net .

Appendix A: List of the Addresses for the Potential Applicants

Dean of the School of Business School of business The American University in Cairo AUC Avenue, P.O. Box 74 New Cairo 11835 Egypt. Dean Faculty of Engineering and Materials Science The German University in Cairo New Cairo City Main Entrance El Tagamoa El Khames Cairo Egypt Dean of Faculty of Management Technology The German University in Cairo New Cairo City Main Entrance El Tagamoa El Khames Cairo Egypt

Dean of Engineering Faculty of Engineering British University in Cairo Suez Desert Road - El Sherouk City Cairo Egypt

Dean
Faculty Business Administration,
Economics and Political Science
British University in Cairo
Suez Desert Road - El Sherouk City
Cairo
Egypt

Dean of Faculty of Engineering Faculty of Engineering Modern Science and Art University 26 July Mehwar Road intersection with Wahat Road 6 October City, Giza, Egypt

Dean of Faculty of Management Sciences Modern Science and Art University 26 July Mehwar Road intersection with Wahat Road,6 October City Giza, Egypt Dean of Collage of Engineering Collage of Engineering OCTOBER 6 UNIVERSTY 6 Octobar City Giza Egypt Dean of College Economics & Management College Economics & Management OCTOBER 6 UNIVERSTY 6 Octobar City Giza, Egypt

Professor Zen Kawasaki , Dean Advisor Electronics and Communications Engineering Department Egypt – Japan University of Science and Tech., P.O. Box 179, New Borg El-Arab City Postal Code 21934 Alexandria, Egypt Professor Mohamed Ragab, Dean Egypt – Japan University of Science and Technology (E-JUST) P.O. Box 179, New Borg El-Arab City Postal Code 21934 Alexandria Egypt Dr. Hassan Elkamchouchi
Department of Electrical Engineering
Faculty of Engineering
Alexandria University
Alexandria – 21544
Egypt

Chair of Electrical Engineering Department Department of Electrical Engineering Facutly of Engineering Alexandria University Alexandria – 21544 Egypt Dean of Faculty of Commerce Faculty of Commerce Alexandria University Alexandria – 21544

Egypt

Chair of Electronics & Communications Engineering Department
Electronics & Communications Engineering Department
FACULTY OF ENGINEERING
AIN SHAMS UNIVERSITY, Abbassia Calro Egypt Dean of Faculty of Commerce Faculty of Commerce Ain Shams University, 11568, Abbassia Cairo Egypt Professor Mohamed AbdelKawe Department: Computers and Systems Engineering Department Faculty of Engineering, Zagazig University Zagazig 44519 Egypt Chair of Electronics and Communication Engineering Department Faculty of Engineering, Zagazig University Zagazig 44519 Egypt

Dean of Faculty of Commerce Faculty of Commerce Zagazig University Zagazig 44519

Egypt

Chair of Electrical Engineering Department Faculty of Engineering Assiut University . 71515 Assiut Egypt Dean of Faculty of Commerce Faculty of Commerce Assiut University 71515 Assiut

Egypt

Chair of Meteorology & Astronomy Department Meteorology & Astronomy Department Faculty of Sidence Cairo University Giza 12613 Egypt Vice Dean for graduate studies and research Faculty of Commerce Cairo University Giza 12613 Egypt Chairman of Agence Spatiale Algérienne, 14 Rue Omar AISSAOUI EL HAMMADIA - BOUZAREAH ALGER ALGERIE

Dr. Mohammed AL Majed
Director of satellite technology program
King Abdulaziz city for science and
technology
P.O Box 6086, Riyadh 11442
SAUDI ARABIA

Professor Serag Habib Communication Engineering Department Faculty of Engineering Cairo University, Giza 12613 EGYPT Professor Sherif Mourad Professor and Vice Dean for research and Higher Studies Faculty of Engineering Cairo University, Giza 12813 EGYPT

Chairman National Authority for Remote Sensing and Space Sciences 23 Joseph Tito Street, El-Nozha El-Gedida, P.O. Box: 1564 Alf Maskan. EGYPT

Professor Amal Zaki Professor of Communication Engineering 23 Joseph Tito Street, El-Nozha El-Gedida, P.O. Box: 1564 Alf Maskan. EGYPT Rei Kawashima c/o University Space Engineering Consortium (UNISEC) Central Yayoi 2FL, 2-3-2 Yayoi Bunkyo-ku, Tokyo 113-0032 JAPAN Prof. Dr. Hayam Shaalan Head of Engineering Research Division National Research Center El Buhouth St., Dokki, 12311 Cairo Egypt Dean of Faculty of Engineering Faculty of Engineering Minia University Minia City EGYPT Dean of Faculty of Commerce Faculty of Commerce Minia University Minia City EGYPT

Dean of Faculty of Engineering Faculty of Engineering South Valley University 83523 Qena

Egypt

Dean of Faculty of Commerce Faculty of Commerce South Valley University 83523 Qena

Egypt

Dean of Faculty of commerce Faculty of commerce Mansoura University El-Gomhouria street Mansoura 35518 Egypt

Dean of Faculty of Engineering Faculty of Engineering Mansoura University El-Gomhouria street Mansoura 35516 Egypt Chair of communication and Electronics Engineering Department Faculty of Engineering, Tanta University Seperbay, Tanta 31511, Gharbia EGYPT Dean of Faculty of commerce Faculty of commerce Tanta University Seperbay, Tanta 31511 Gharbia EGYPT

Dean of Electronics Research Inst. Electronics Research Institute Inside National Research Centre 33 El Tahrir St. Dokki, Giza Egypt Chairman of Space Program Emirates Institution for Advanced Science and Technology (EIAST) P.O.Box: 211833 Dubai UAE Dean College of Business Administration College of Business Administration Dubal International Academic City P.O.Box:503000 Dubal Dubal UAE

Dean of Olayan School of Business Olayan School of Business American University of Beirut P.O.Box 11-0236 Riad El-Solh / Beirut 1107 2020 Lebanon Chair of Department of Aeronautical Engineering Department of Aeronautical Engineering JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY Irbid 22110 Jordan

Appendix B: Photos for the first regional seminars

Photos taken during the first seminar at Aerospace Engineering Department, King Fahd University of Petroleum and Minerals (KFUPM) on 3rd December 2011.









Appendix C: Photos from the first online seminars

Photos taken during the first online seminar at Aerospace Engineering Department, Cairo University on 16th February 2012.













Appendix D: Invitation letter sent to potential applicants

CAIRO UNIVERSITY

Faculty of Engineering



جامعة القاهرة كلية الهندسة م هندسة الطير إن والفضاء

AEROSPACE DEPARTMENT

Thursday, January 12, 2012

Dear MIC2 Participant

We pleased to announce the 2nd Mission Idea Contest of Micro/Nano-Satellite Utilization which is sponsored by the University of Tokyo and University Space Engineering Consortium in Japan (UNISEC).

The Mission Idea Contest was established last year to provide aerospace engineers, college students, consultants, and anybody interested in space with opportunities to present their creative ideas and gain attention internationally. The primary goal of this contest is to open a door to a new facet of space exploration and exploitation and encourage innovative exploitation of micro/nano-satellites to provide useful capabilities and services.

This year the contest has two categories

- 1- Mission Idea and Satellite Design (Engineering Category)
- 2- Mission Idea and Business Model (Business Category)

Last year contest, the first category only was considered. This year the second category is added. Particapnts in the first category are expected to design micro/nano-satellite and infrastructure for solving problems in their region and/or or global problems like continuous monitoring of water pollution and Co₂ emission levels.

The second category is dedicated to satellite users and business communities. Participants in this category are expected to consider the satellite mission idea, its implementation plan and business plan with the micro/nano-satellite(s) with their specifications provided in advance. Cost of satellite, launching and ground station will be provided. Based on the provided cost models participants are required to calculate the total cost and make a business plan that would enable to recover the cost and yield to a profit (or sustain the project).

We are looking forward for the participations of your esteemed institute in this contest. We will appreciate if you can circulate the information about this contest to the researchers and students at your esteemed institute.

Further information about this contest and last year contest as well as prizes and awards can be found in the web site www.spacemic.net. We recommend checking this web site from time to time as we will announce about the regional seminar in Egypt very soon. In the mean time, if you have any inquiry about any category of the contest or need further explanation please don't hesitate to email me at any time. This year we launch weekly live internet eMeeting with the regional coordinator (Egypt and KSA) starting from February to April 2012. In this eMeeting you can ask any question about the contest to your regional coordinator. Information about this eMeeting is provided in a separate sheet attached to this latter.

CAIRO UNIVERSITY





بامعة القاهـرة كل<mark>بـة</mark> الهندسة

قسم هندسة الطيران والفضاء

AEROSPACE DEPARTMENT

We are looking forward for your institute participation in this important contest. Should you have any questions please don't hesitate to email me at anytime.

Sincerely yours,

Mohammed Khalil Ibrahim, Ph.D.

Associate Professor and 2nd Mission Idea Contest regional Coordinator (Egypt and KSA)

Email: mkhalil@enq.cu.edu.eq

www.spacemic.net

Currently

Associate Professor

Department of Aerospace Engineering

King Fahd University of Petroleum and Minerals (KFUPM) B.O. BOX 398, Dhahran 31261, KSA

email: khalilibrahim@kfupm.edu.sa

Important Dates:

September, 2011 – April, 2012: Regional Seminars

- May 1, 2012: Abstract Deadline
- June 15, 2012: Evaluation Deadline
- July 1, 2012: Announcement of finalist
- September 2012: Final paper deadline

October 10, 2012: Final Presentation at the 4th nano-satellite symposium in Japan

Attachments:

- This letter
- 2nd Mission Idea Contest Live instruction sheet
- 2nd Mission Idea Contest Flyer
- 4th Nano-satellite Symposium Flyer

Appendix E: Live Q&A internet session during MIC2

2nd Mission Idea Contest - Live (KSA & Egypt Region) <u>Instruction Sheet</u>

1. General

Event ID: JTL076721

Leader: Dr. Mohammed Khalil Ibrahim Date: Starting from 01 February 2012

Time: 5:00 PM - 6:00 PM (GMT +03:00) Kuwait, Riyadh

Duration: Every Wednesday

2. Description

Every Wednesday starting from Feb. 1, 2012. at 4:00 PM - 5:00 PM (Egypt local time) or 5:00 PM - 6:00 PM (KSA local time) there is will be a live internet session to answers to your questions about 2nd mission idea contest (www.spacemic.net). This online weekly session will stay until the end of April 2012. Looking forward for your participations.

Mohammed Khalil Ibrahim, Ph.D. Egypt and KSA regional Coordinator.

3. Attend Instructions

Use the following link to attend and/or playback previous sessions:

Guest Attend URL:

http://centra.kfupm.edu.sa/GA/main/0000018e609b00000134cb6138328010

Guest Playback

URL: http://centra.kfupm.edu.sa/GP/main/0000018e609b00000134cb6138328010

4. Event ID and password

Attendees may enter the event by going to the URL below, and entering the event ID.

URL: http://centra.kfupm.edu.sa/main/

Event ID: JTL076721 Event Password: spacemic

5. Event Settings

Public: No (Egypt and KSA Region Only)

Event Type: eMeeting

Maximum Available seats per session: 20 seats

This session may be recorded and each attendee may have the capability of distributing this recording. Each participant's use of recordings and participant information is subject to U.S. and international privacy laws.