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Local Chapter Activity Report at the Local Chapter Empowerment Meeting

UNISEC-Kazakhstan

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Department of Mechanics
al-Farabi Kazakh National University

2025

History of Local Chapter Activities

UNISEC-Kazakhstan was established in 2022

Member universities:

- al-Farabi Kazakh National University (KazNU)
- Almaty University of Power Engineering and Telecommunications (AUES)
- L.N. Gumilyov Eurasian National University (ENU) (in process)



AUES



History of Local Chapter Activities

- Participated in CLTP in 2022 (CLTP11)

CLTP 11 was organized in Nihon University(Chiba, Japan) and AOTS (Tokyo, Japan)

Preliminary online-Lectures: August 1-15, 2022

Date: August 18-31, 2022



History of Local Chapter Activities

- Participated in CLTP in 2023 (CLTP12)

CLTP 12 was organized in Nihon University(Chiba, Japan) and AOTS (Tokyo, Japan)

Preliminary online-Lectures: July 17- August 20, 2023

Date: August August 21 - September 1, 2023



History of Local Chapter Activities

- Participated 7th Nano-Satellite Symposium & 4th UNISEC-Global Meeting
2016 (Varna, Bulgaria)



Al-Farabi Kazakh National University

The 7th Nano-Satellite Symposium

Development of a first Kazakhstan student
nanosatellite Al-Farabi-1

Al-Farabi Kazakh National University
Almaty, Kazakhstan

presenter: PhD student Nursultan Doszhan



Al-Farabi Kazakh National University

Contents:

- Introduction – Al-Farabi-1 background information
- Mission of Al-Farabi series
- Subsystems of Al-Farabi-1
- The power supply system
- Antenna deployment system
- The communication system
- The motion simulation model of Al-farabi-1
- Thermal and mechanical analyzes of Al-farabi-1
- Conclusion
- Lessons learned
- Future plan

2/12

History of Local Chapter Activities

- Attended 31st ISTS & 8th Nano-Satellite Symposium 2017 (Matsuyama, Japan)



Joint Conference : 31st ISTS , 26th ISSFD & 8th NSAT

ISTS : International Symposium on Space Technology and Science
ISSFD : International Symposium on Space Flight Dynamics
NSAT : Nano-Satellite Symposium

宇宙技術および科学の国際シンポジウム
国際フライトダイナミクスシンポジウム
超小型衛星シンポジウム

"Open up a New Age of Space Discovery"

Space Cuckoo Flies to New Space Frontier from Matsuyama~
2017年(平成29年)6月3日(土)~6月9日(金)
ひめぎんホール
June 3- 9, 2017 Matsuyama-Ehime, Japan Himegin Hall

<http://www.ists.or.jp/> ISTS事務局 〒185-0922 東京都中央区日本橋区町4-1-21 近ビルディング4F
Tel +81-3-6202-5315 e-mail ists@ists.or.jp

主 催 / 第31回宇宙技術および科学の国際シンポジウム組織委員会
一般社団法人 日本航空宇宙学会

共 催 / 第26回国際フライトダイナミクスシンポジウム(ISSFD)組織委員会
国際超小型衛星シンポジウム組織委員会
特別協力 / 京都府、和山県、第11回宇宙技術および科学の国際シンポジウム愛媛
松山大学航空宇宙研究所
体 験 / 松山大学宇宙学、鳥取大学宇宙情報研究センター、経済産業省、海上交通省、総務省
宇宙航空研究開発機構、情報通信研究機構、日本経済団体連合会、宇宙開発利用
推進委員会、日本宇宙航空研究開発機構(JAXA)
協 賛 / 日本ロケット協会、日本衛星学会、電子情報通信学会、日本機械学会、計測
自動制御学会、日本マイクロエレクトロニクス学会、日本宇宙航空研究開発学会、主盟
大学会、石川県立大学、日本航空学会、宇宙飛行士協会、アメリカ宇宙
宇宙学会(A.A.U.)、日本産科学会、地球電磁気/地球気象学会、宇宙太陽
観測学会

※写真:JSPC 提供 JPH1047005 内容は変更されています。



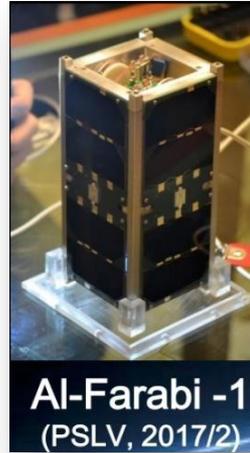
History of Local Chapter Activities

- Participated 11th Nano-Satellite Symposium & 8th UNISEC-Global Meeting 2022
(Istanbul, Turkey)



History of Local Chapter Activities

- *Practical Space Projects (al-Farabi-1,2 cubesats)*



- *Participated in Uniform-3&4 microsatellite EM integration and test (Vibro&TV) (Japan 2015)*



UNISEC-Global Activities

**Number of

- Member Universities: 3
- Students: 40
- Professors: 15
- Others (Corporate members, etc.): 8

- *Organized international student competition Kazakhstan Smart Space*



UNISEC-Global Activities

- Organized / International Forum "AUES INTERNATIONAL AEROSPACE COMPETITION (AIAC)" April, 2023



UNISEC-Global Activities

-Organized Space QUIZ competition among 1-4 year bachelor students of KazNU , April 2023



UNISEC-Global Activities

- *Participated in Space Open days in*

Kazakhstan

took part in an open day organized by the space company Ghalam LLP at the National Space Center. Ways of further cooperation were discussed.



UNISEC-Global Activities i

- *Participated in Seminar-Meeting of JSC “National Center of Space research and Technology”, December, 2023*

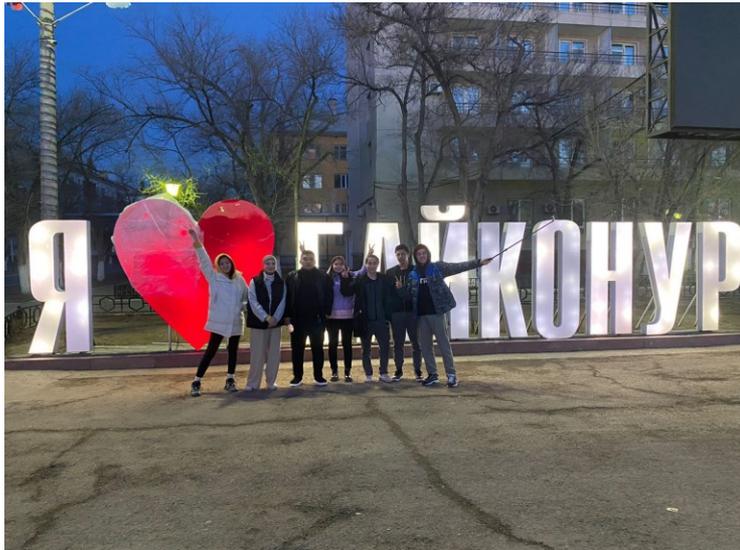
Took part in a seminar-meeting on the creation of a scientific and educational consortium and space technology cluster "Almaty".



UNISEC-Global Activities

- *Attended in rocket launch in Baikonur launch area, 2022*

Students participated in monitoring the launch of the launch vehicle "Soyuz-2.1a" with the spacecraft "Soyuz MS-22".



UNISEC-Global Activities

- *Attended in rocket launch in Baikonur launch area, March 2023*

Students participated in monitoring the launch of the Proton-M launch vehicle with the Luch-5 relay spacecraft.



UNISEC-Global Activities

- Participated in IAC 2023, Baku



UNISEC-Global Activities

- Participated in Virtual UNISEC-Global Meeting



25TH VIRTUAL UNISEC-GLOBAL MEETING

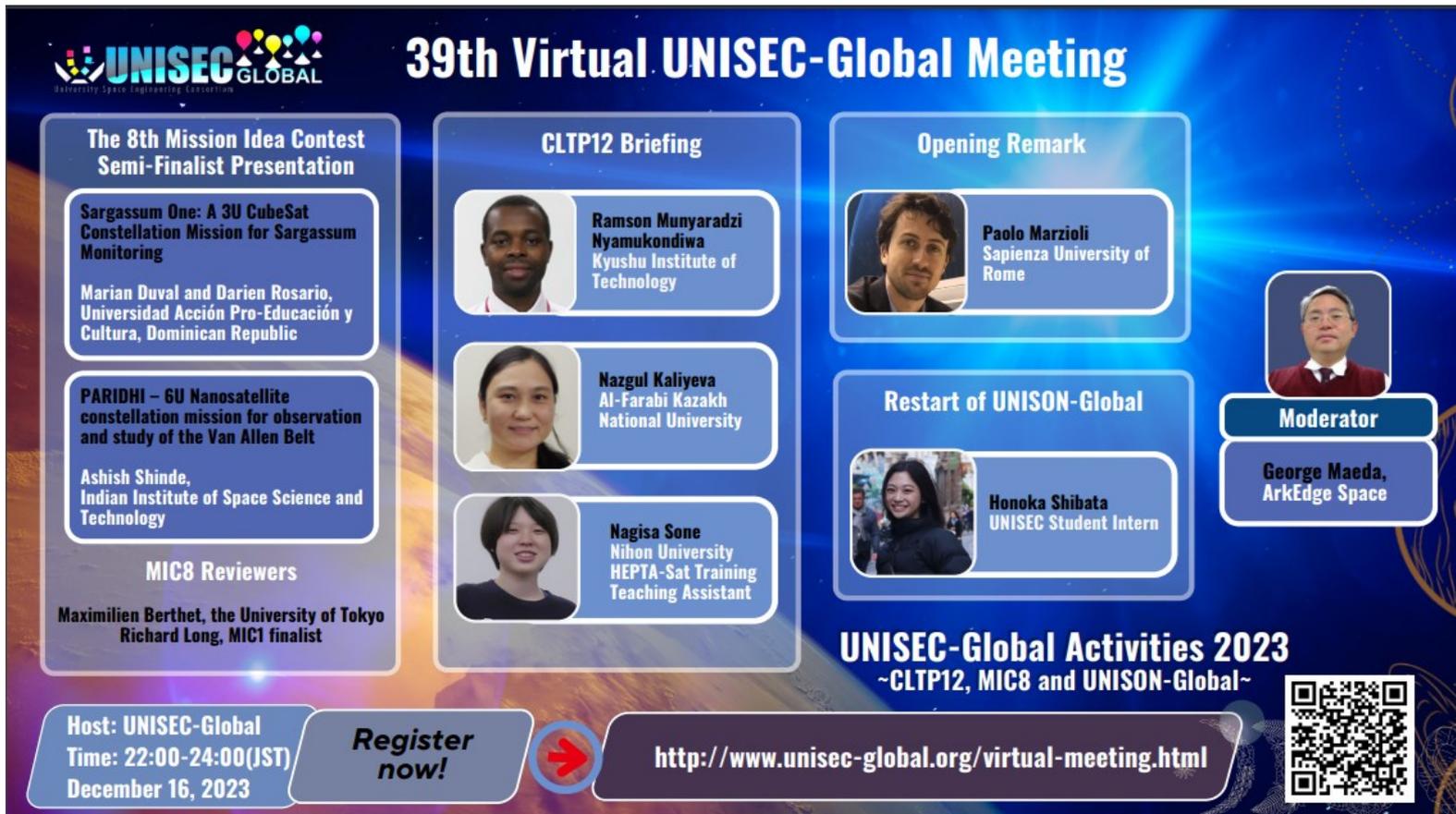
Host: UNISEC-Global
Time: 22:00-24:00 (JST)
September 17, 2022

MODERATOR	<p>Nate Taylor UNISEC-Global</p>	
PRESENTATIONS	<p>Mr. George Maeda UNISEC-Global Topic: Tokyo International Conference on African Development(TICAD 8)-UNISEC report</p>	
AWARDING	<p>Dr. Samer Lahouar UNISEC-Tunisia, HE National Contact Point-Space Topic: Tunisia Space Essay Competition Awarding</p>	<p style="font-size: 1.2em; color: red;"><i>Theme:</i></p> <p style="font-size: 1.5em; color: red;"><i>Impacting space through capacity building activities"</i></p> 
REGIONAL REPORT	<p>Dr. Yeshurun Alemayehu Adde (Kibret) Point of Contact-UNISEC-Ethiopia, Deputy Director General-Ethiopian Space Science & Technology Institute Topic: Space Activities-Ethiopia</p>	
CANSAT LEADER TRAINING PROGRAM (CLTP 11) BRIEFING SESSION WITH CLTP 11 GRADUATES	<p>Andrés Felipe Guarnizo Saavedra Assistant Professor, University of EAN Member, UNISEC Colombia</p> <p>Mark Angelo Cabrera Purio Ph.D. in Space Systems Engineering student, Kyushu Institute of Technology Assistant Professor, Adamson University</p>	
ANNOUNCEMENTS & CLOSING	<p>Alisher Aden Doctoral student, Almaty University of Energy and Communication named after G. Daukeyev, G. Daukeyev Almaty University of Energy and Communications</p> <p>Nursultan Doszhan Senior lecturer-Al-Farabi Kazakh National University</p> <p>Rei Kawashima UNISEC-Global and those who have announcements</p>	

[HTTP://WWW.UNISEC-GLOBAL.ORG/VIRTUAL-MEETING.HTML](http://www.unisec-global.org/virtual-meeting.html)

UNISEC-Global Activities

- Participated in Virtual UNISEC-Global Meeting



UNISEC GLOBAL
University Space Engineering Consortium

39th Virtual UNISEC-Global Meeting

The 8th Mission Idea Contest Semi-Finalist Presentation

Sargassum One: A 3U CubeSat Constellation Mission for Sargassum Monitoring

Marian Duval and Darien Rosario,
Universidad Acción Pro-Educación y Cultura, Dominican Republic

PARIDHI – 6U Nanosatellite constellation mission for observation and study of the Van Allen Belt

Ashish Shinde,
Indian Institute of Space Science and Technology

MIC8 Reviewers

Maximilien Berthet, the University of Tokyo
Richard Long, MIC1 finalist

CLTP12 Briefing



Ramson Mnyaradzi Nyamukondiwa
Kyushu Institute of Technology



Nazgul Kaliyeva
Al-Farabi Kazakh National University



Nagisa Sone
Nihon University
HEPTA-Sat Training Teaching Assistant

Opening Remark



Paolo Marzioli
Sapienza University of Rome

Restart of UNISON-Global



Honoka Shibata
UNISEC Student Intern



Moderator

George Maeda,
ArkEdge Space

UNISEC-Global Activities 2023
~CLTP12, MIC8 and UNISON-Global~

Host: UNISEC-Global
Time: 22:00-24:00(JST)
December 16, 2023

Register now!



<http://www.unisec-global.org/virtual-meeting.html>



UNISEC-Global Activities



The poster features a blue background with a cityscape at the bottom. At the top, there are three logos: a portrait of Al-Farabi, the Kazakh National University emblem, and the Kazakhstanzosgo logo. Below the logos, the text reads: 'ӨЛ-ФАРАБИ АТЫНДАҒЫ ҚАЗАҚ ҰЛТТЫҚ УНИВЕРСИТЕТІ / КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ / AL-FARABI KAZAKH NATIONAL UNIVERSITY' and 'МЕХАНИКА-МАТЕМАТИКА ФАКУЛЬТЕТІ / МЕХАНИКО-МАТЕМАТИЧЕСКИЙ ФАКУЛЬТЕТ / FACULTY OF MECHANICS AND MATHEMATICS'. The main title is 'Студенттер мен жас ғалымдардың «ФАРАБИ ӘЛЕМІ» атты халықаралық ғылыми конференциясы'. Below that, it says 'Международная конференция студентов и молодых ученых «ФАРАБИ ӘЛЕМІ»' and 'International Scientific Conference of Students and Young Scientists «FARABI ALEMI»'. The date '06-08.04.2023' is at the bottom.

ҒАРЫШТЫҚ ТЕХНИКА ЖӘНЕ
ТЕХНОЛОГИЯЛАР

КОСМИЧЕСКАЯ ТЕХНИКА И
ТЕХНОЛОГИИ

SPACE ENGINEERING AND
TECHNOLOGIES

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ICESCO'S 4th International Aerospace SYMPOSIUM (September 2025)



UNISEC-Global Activities in 2024-2025

- *On-going Space Projects*

Study of the wave climate of the water bodies of Kazakhstan using the satellite altimetry data (*Supervisor – Prof. Z.Rakisheva, Foreign consultant – Prof. T.Soomere, Tallin University of Technology, Estonia*)

New Courses in Geospatial Engineering for Climate Change Adaptation of Coastal Ecosystems» (GEOCLIC) (Erasmus+) (*Coordinator – KazNU (Kazakhstan), Partners – Netherlands, Germany, Azerbaijan, Latvia, Romania, Turkmenistan*)

Development of nanosatellite orientation control system with flywheels as actuators based on linearization methods (*Supervisor – PhD, K. Alipbayev*)

Design and development of narrow-beam satellite-to-satellite antenna systems with the best and optimal characteristics for Cubesat form factor (*Supervisor – PhD, K. Alipbayev*)

Plan for 2026 and beyond

- Support 5rd International Competition Kazakhstan Smart Space (April, 2026)
- CanSat competition between the domestic universities (2026)
- International Conference of young scientists (April, 2026)
- Support to organization UNISEC meeting (November, 2026)

Thank you for your attention!

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