



**United Nations International Meeting on the Applications of
Global Navigation Satellite Systems, 5-9 December,
Vienna, Austria**

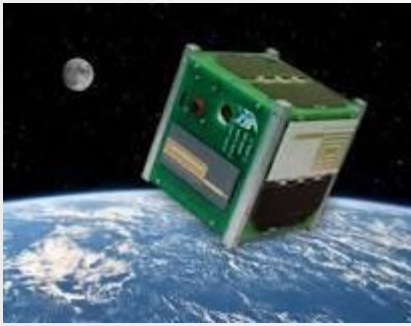
CAPACITY DEVELOPMENT ACTIVITIES ON GNSS

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SPACE TECHNOLOGY IN MONGOLIA



- 1965: Space technology and application is started under INTERCOSMOS program
- 1970: First Telecommunications satellite data receiving station "ORBIT"
- 1970: World meteorological satellite data receiving ground station is established /NRSC/
- 1981: J. Gurragchaа, the first cosmonaut of Mongolia the 2nd Asian in the space.
- 2000: The first GNSS CORS was installed in 2000 by **ALAGAC**.
- 2017: Mazaalai /CubeSAT/, the first satellite in the space



GNSS NETWORKS IN MONGOLIA

- 2009, Government Resolution No.25:
 - Coordinate system – WGS 84 (ITRF 2000 epoch 1997.8 /MonRef 97/)
 - Height system – Baltic Sea
 - Projection - UTM
- 2014, ALAGAC Resolution No. A/112 and A/261
 - ITRF2008 epoch 2005.0
 - The Sustainable Development Goals SDG-2030 Approved by Parliament of Mongolia, to launch and use National Communication Satellite;

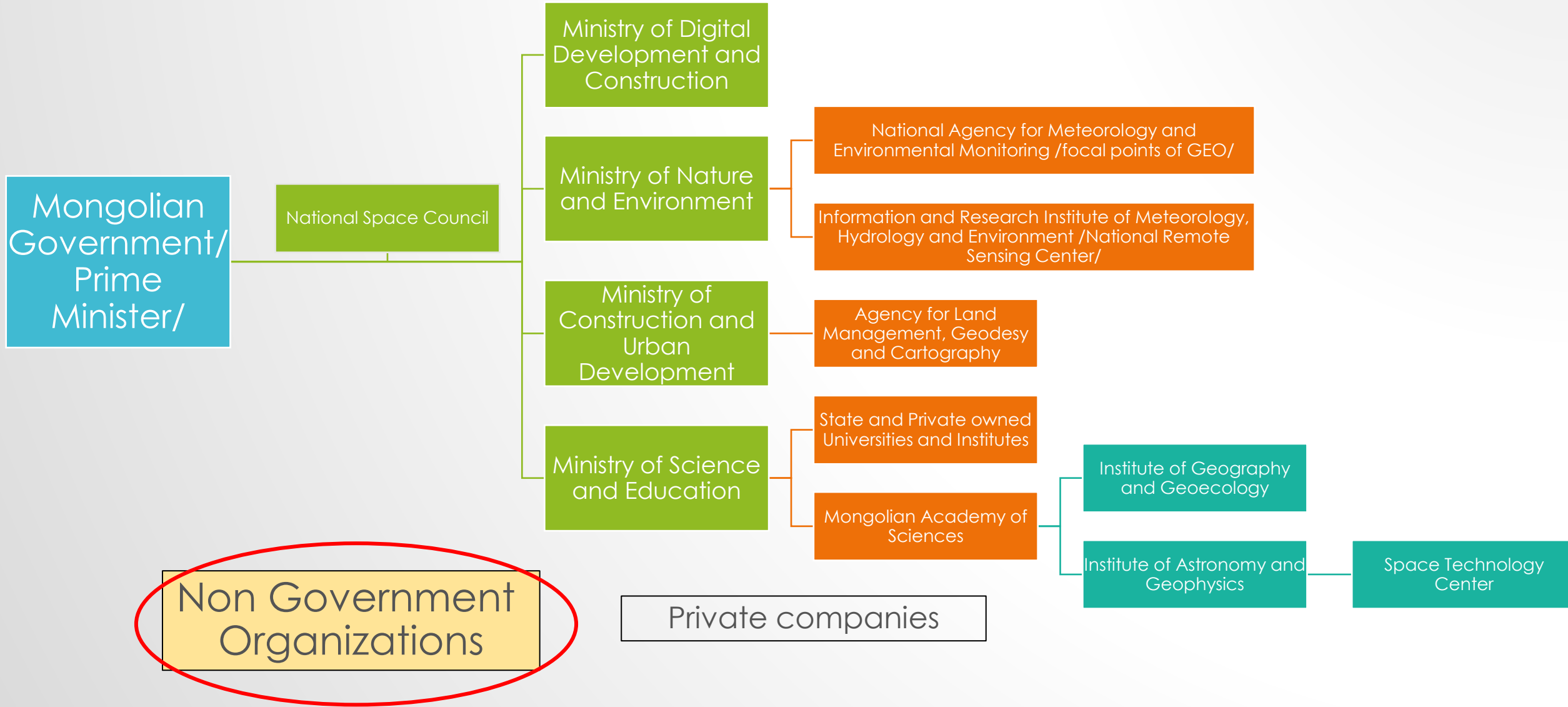


GNSS CORS NETWORK USAGE AND DEMANDS ON NETWORKS & APPLICATION IN MONGOLIA:

- **National fundamental GNSS network and more than 300 licensed companies are end users of the GNSS network;**
- Academic and Research purposes;
- International joint research and experiments;
- Meteorological and environmental analysis and research;
- **Producing topographic and cadastral mapping by real-time kinematic measurement (RTK);**
- **Daily geodetic measurements for construction, urban development, civil aviation, mining agriculture, railways, roads and mining industry;**
- Others

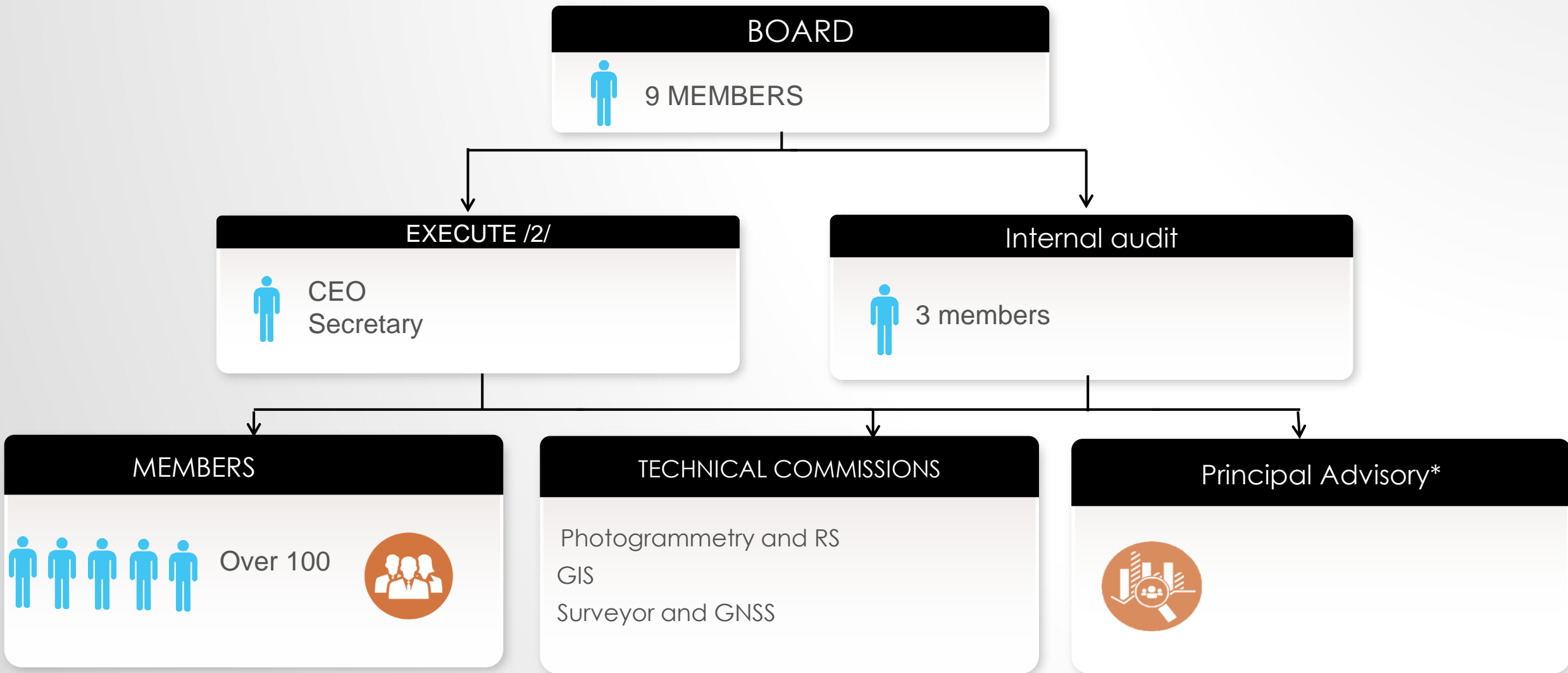


SPACE TECHNOLOGY RELATED ORGANIZATIONS





OUR ASSOCIATION STRUCTURE





ACTIVITIES

1500

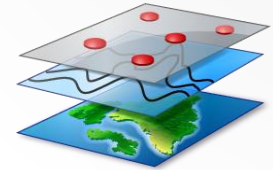


Geo-meeting



Monthly

Geo-workshops



Quarterly

10

Workshops



GIS day

GISday

Annual

Geo-forum

GEO-FORUM

Annual



GEO-MEETING

Since
2014

10
times/
per year



Knowledge sharing and
Networking event

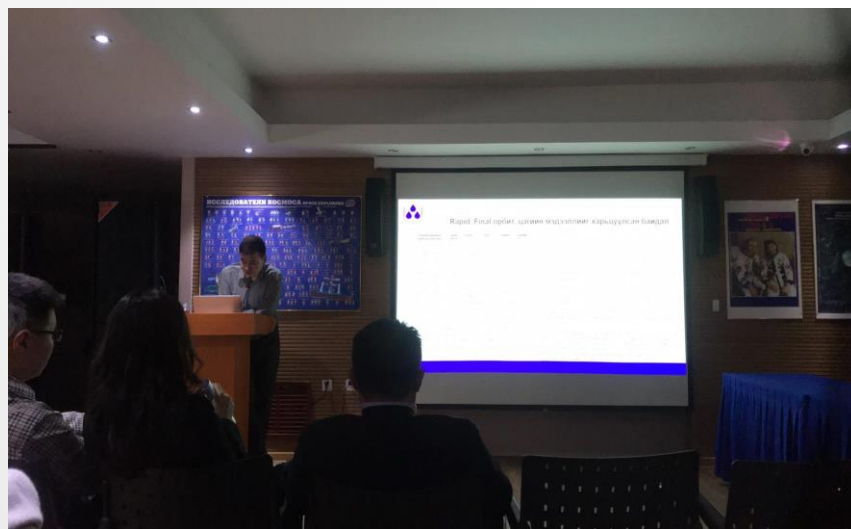
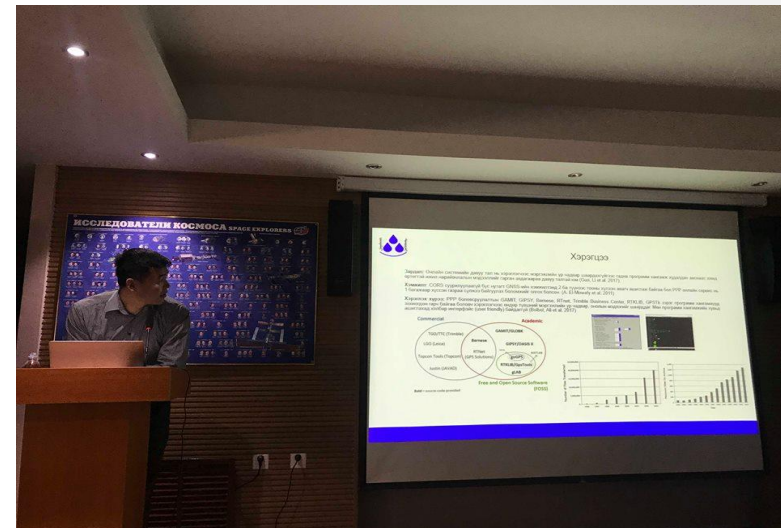


2 presentation about geo-spatial
technology and applications



GEO-FORUM: APPLICATION OF THE GNSS

In collaboration with Institute of Astronomy and Geophysics of the Mongolian Academy of Sciences, “Geo-Forum”: Application of the GNSS” was successfully organized on April, 2019.





United Nations/Mongolia Workshop on the Applications of Global Navigation Satellite Systems (in Virtual Format)

**Five-day Workshop will be held in
virtual format in Ulaanbaatar,
from 25 to 29 October 2021.**

Hold in virtual format

- More than 100 people participated from over 20 countries;
- All GNSS Providers and other observers;

Agenda included:

- Current and planned GNSS and satellite-based augmentation systems
- GNSS-based applications focusing on, but not limited to
- GNSS spectrum protection and interference detection and mitigation
- GNSS and space/atmospheric weather monitoring
- GNSS reference frames/systems and reference station networks
- Capacity building, training and education in the field of GNSS

The banner features a dark blue background with a satellite and antenna graphic. At the top, logos for the United Nations Office for Outer Space Affairs, NICG, the Mongolian Geospatial Association (Mongolian text: МОНГОЛ УЛСЫН ГАДААД ХАРИЛЦААНЫ ЯАМ), the Mongolian Geospatial Association (Mongolian text: МОНГОЛ УЛСЫН ЗАСГИЙН ГАЗАР), and the National Center for Geospatial Information (Mongolian text: БАРИЛГА ХОТ БАЙГУУЛАЛТЫН ЯАМ) are displayed. The main title is in large white letters: "UNITED NATIONS/MONGOLIA WORKSHOP ON THE APPLICATIONS OF GLOBAL NAVIGATION SATELLITE SYSTEMS". Below the title, the dates and location are given: "ULAANBAATAR, MONGOLIA, 25 - 29 OCTOBER 2021". The organizers are listed as "ORGANIZED JOINTLY BY The United Nations Office for Outer Space Affairs and The Mongolian Geospatial Association". At the bottom, logos for supporters and co-sponsors are shown, including the Mongolian Academy of Sciences (Mongolian text: МОНГОЛ УЛСЫН ШИНЖЛЭХ УХААНЫ АКАДЕМИ), MONMAP, ICT GROUP, 5D WORLD, CHCNAV, INTEC, and ARCA.

INTERNATIONAL ACTIVITIES





UNOOSA/ICG WORKSHOPS

- **January 2018, GNSS Training Course and GNSS for Policy and Decision-Makers Course, Asian Institute of Technology (AIT), Bangkok, Thailand;**
- **May 2018 – Technical Seminar on Reference Frames in Practice, Turkey;**
- **October 2018 - The International Space Weather Initiative School on Space Weather and Global Navigation Satellite Systems 2018, Baku, Azerbaijan;**
- **January 2019 - GNSS Training Course and GNSS for Policy and Decision-Makers Course, Asian Institute of Technology (AIT), Bangkok, Thailand;**
- **June 2019- 2019 UN/Fiji Workshop on the Applications of GNSS – UNOOSA, Fiji;**
- **January 2020 - GNSS Training Course Asian Institute of Technology (AIT), Bangkok, Thailand;**
- **January 2021 - GNSS Training Course and GNSS for Policy and Decision-Makers Course, Asian Institute of Technology (AIT), Thailand, Bangkok /online/;**
- **October 25-29, 2021- UN/Mongolia Workshop on the Applications of GNSS, in Hybrid format, Ulaanbaatar, Mongolia;**



INTERNATIONAL RESEARCH PROJECTS and GRANTS

- “SDI Cookbook Published In Mongolian Language”, Global SDI Association’s Small Grant, 2017;
- “Establishing an Open Repository and Catalogue for Geospatial Educational Resources”, ISPRS Education and Capacity Building Initiatives 2018; URL: <http://isprs.education>
- **Asia-Pacific Space Cooperation Organization (APSCO) International GNSS Monitoring and Assessment” (iGMA) project, 2018-2023**
- Sentinel-HUB data access grant June 2022 – June 2023
- ASI/PRISMA hyperspectral data access quote /300 scenes/
- Untangling the Interactions Between Rural Outmigration, Grassland Degradation, and Sustainable Land Use in Mongolia 2022-2025 NASA’s Land Cover funded project



INTERNATIONAL GNSS MONITORING AND ASSESSMENT (IGMA) PROJECT

- September 2011, ICG-6. China proposed GNSS service performance should be monitored by some international third party organization. IGMA task group co-chaired by China, IGS and Japan was setup with its objective and tasks to promote international GNSS monitoring and assessment activities.
- Mongolia Government, member of APSCO, is granted to our association for the local institution of APSCO-iGMA project implementation.
- APSCO **International GNSS Monitoring and Assessment” (IGMA) project in Mongolia** is implemented with our members, New Mongol Institution of Technology and Chandmani Survey, LLC, Since 2018.




Ulaanbaatar, Sep, 2018,

Uvs, Jun.2019



PARTNERS

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NUM-ITC-UNESCO
 Laboratory for Remote Sensing/Space Science



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MONMAP

ICT GROUP | INFORMATION AND COMMUNICATION TECHNOLOGY



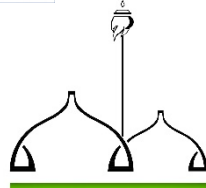
ANDOREAN



UNITED NATIONS
 Office for Outer Space Affairs



GEOMATICS ENGINEERING SERVICE
 ГЕОДЕЗИ, ЗУРАГ ЗҮЙН ҮЙЛДВЭРЛЭЛ, ҮЙЛЧИЛГЭЭ



ENGINEERING GEODESY LLC



5D WORLD
 Геодезийн хэмжилт боловсруулалт, зураг төсөл, сургалт үйлчилгээ

CHCN AV
 Make your work more efficient



PIESAT

SuperMap

NAVINFO

CSNO-AEC
 中国卫星导航管理办公室学术交流中心
 China Satellite Navigation Office Academic Exchange Center



SWOT ANALYSIS IN MONGOLIA

STRENGTHS

- Stability in existence and capable of all levels including government organizations and agencies, scientific institutes and universities with subjected credits and non-government organizations;
- Technologies and infrastructure;
- Equipments and substations;

WEAKNESS

- No effective cooperation between institutions;
- No enough budget;
- Not enough capability on activities;
- Insufficient introductory activities to students and young adults;
- Lack of human resource;
- Lack of educational program either specific classes;

OPPORTUNITIES

- Adopt international best practices;
- Work with potential local and international partners to develop GNSS in Mongolia;
- Implement joint projects and programs within all levels and other countries;
- Cooperate with professors and researchers for long- and short-term period;
- Organize workshops/Seminars;
- Summer schools;

THREATS

- Lack of financial resources
- Incomplete local regulations
- Lack of Human resource



CONTACT

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SOCIAL MEDIA

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THANK FOR YOUR ATTENTION