



APSCO

ASIA-PACIFIC SPACE COOPERATION ORGANIZATION

Introduction of APSCO and it's activities!

BANGKOK, THAILAND

16-19, November, 2010



APSCO
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- ***History and Establishment***
- ***Structure and Current Status***
- ***Activities and Cooperation***
- ***International Communications***



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- ***The Initial Stage***

In the November of 1992, the *Asia-Pacific Workshop on Multilateral Cooperation in Space Technology and Applications (AP-MCSTA)* was held in Beijing.

China, Pakistan and Thailand proposed the institutionalization of the mechanism which was agreed by the participants from 16 Asia-Pacific Countries.





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• *The Milestone of the Preparation Stage*

On October 28th of 2005, the *Signing Ceremony of APSCO Convention* was held in the Great Hall of the People, Beijing. 8 countries in Asia-Pacific Region signed the Convention, which included Bangladesh, China, Indonesia, Iran, Mongolia, Pakistan, Peru and Thailand.

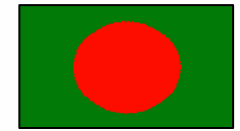




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On June 1st of 2006, the representative of *the Government of Turkey* signed the APSCO Convention in Beijing.

9 Signatory Countries.

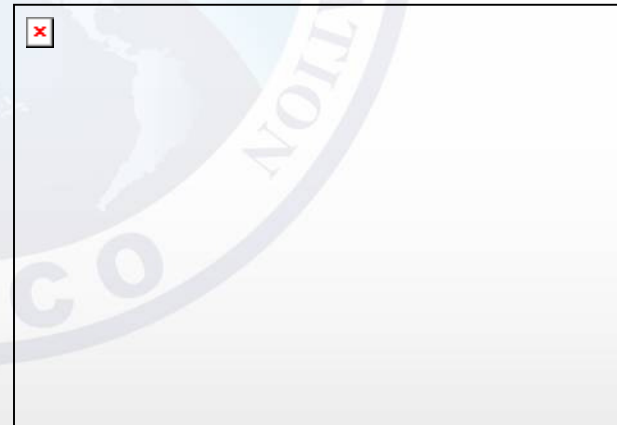




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• *The Establishment of APSCO*

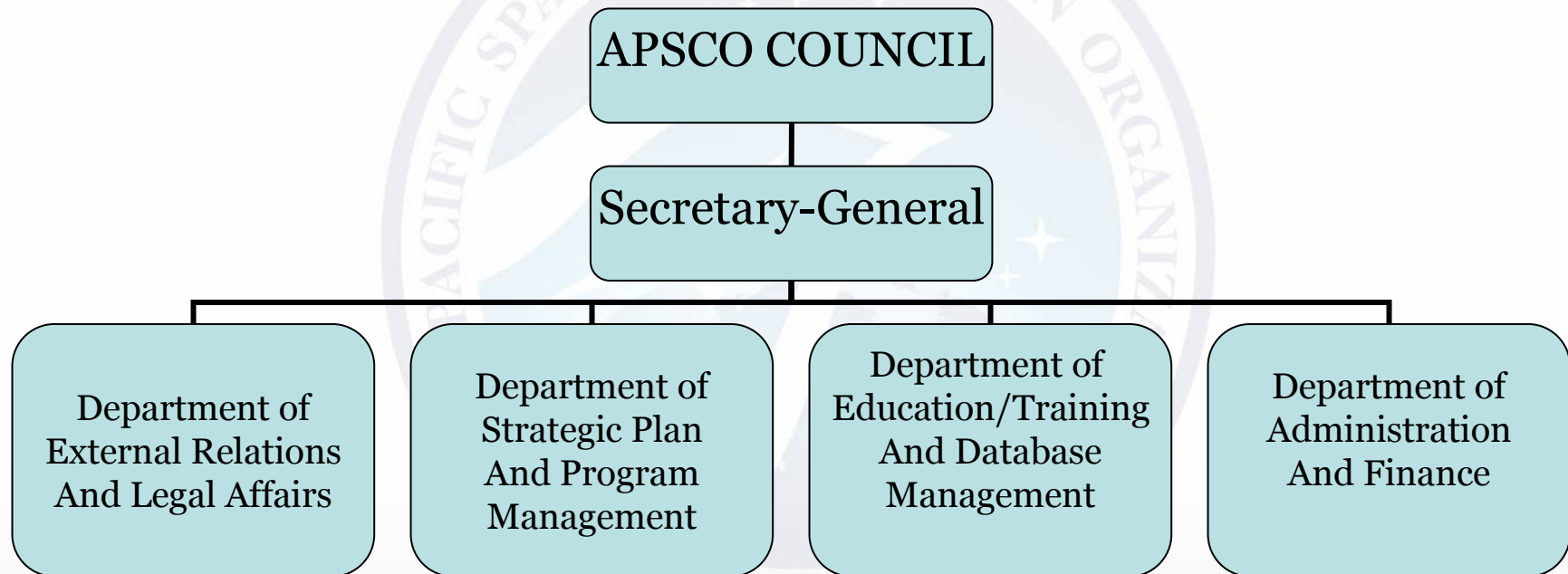
- On December 16th of 2008, the **Inauguration Ceremony of APSCO** was held in Beijing, China.
- In the following two days, ministerial-level representatives from 9 Signatory Countries, along their delegations attended the **First Council Meeting of APSCO**.





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The Structure of APSCO





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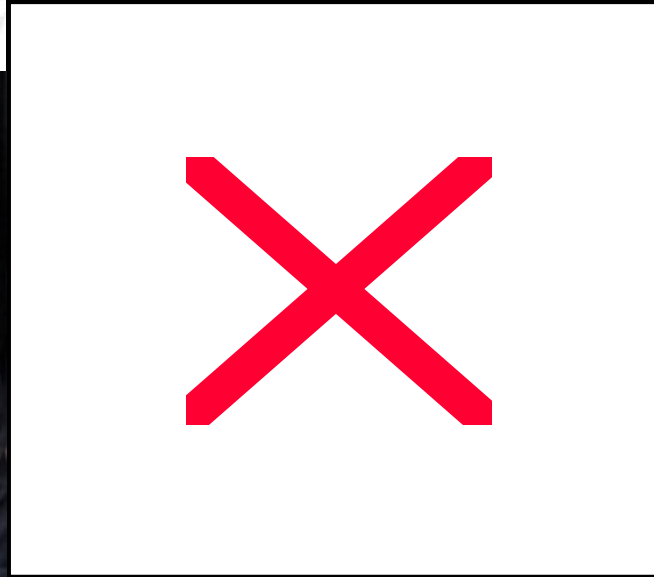
•The Chair-board of APSCO Council

Chairman of the Council: Mr. Thaneerat Siriphachana (Thailand),

Vice-Chairmen of the Council: Mr. Abdus Samad (Bangladesh),
Dr. Chen Qiufa (China).



Mr. Abdus Samad (Bangladesh)



Mr. Thaneerat Siriphachana (Thailand)



Dr. Chen Qiufa (China)



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•The Secretariat



Secretary-General:

Dr. Zhang Wei (China)



Director-General of Departments:

Mr. Ahmad Talebzadeh (Iran)

Dr. Maqbool Ahmed Chaudhry
(Pakistan)

Mr. Tsoodol NyamkhUU (Mongolia)

Ms. Liu Xiaohong (China)



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Current Status of APSCO

- **International Recognition**

APSCO is drawing more international attention. It has been granted as a *permanent observer* by the United Nations Committee on the Peaceful Uses of Outer Space (UN-COPUOS) on the 52nd Session of Committee meeting in Vienna, on 12 June 2009.

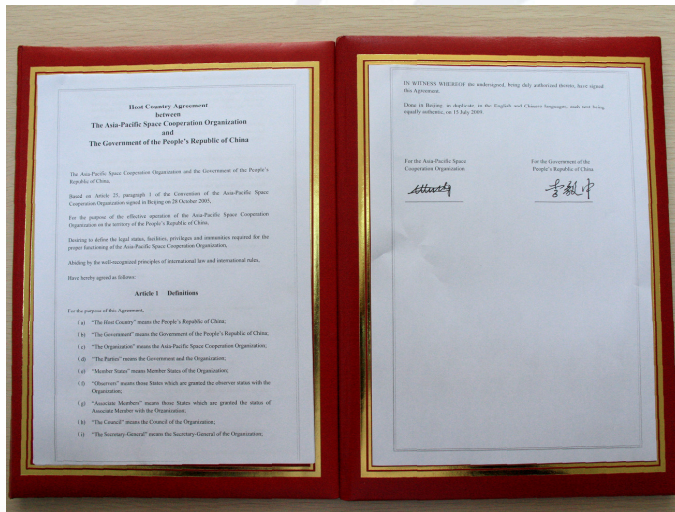




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Current Status of APSCO

- Host Country Agreement**



Dr. Zhang Wei, Secretary-General of APSCO and Mr. Li Yizhong, Minister of Ministry of Industry and Information Technology of China signed **the Host Country Agreement** on 15 July 2009 in Beijing, China.



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Headquarters

In November of 2009, APSCO moved into its new headquarters office building, which is located in Beijing and donated by Chinese Government.





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Member-State Space Achievements Exhibition



The Exhibition of Member State Space Achievements was held at the APSCO Headquarter from December 2009.



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• *The First Council Meeting in 2008*

On December 17-18 of 2008, ministerial-level representatives from 9 Signatory Countries, along their delegations attended **the First Council Meeting of APSCO.**





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The Second Council Meeting in 2009

- Ministerial-level Council meeting is held in Beijing during 17-18 Decembers, 2009





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The 3rd Council Meeting of APSCO

September 16th -17th, 2010





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Space Activities and Cooperation





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Fields of Cooperation

•Article 6 of the Convention of APSCO

- Space technology and programs of its applications;
- Earth observation, disaster management, environmental protection, satellite communications and satellite navigation and positioning;
- Space science research;
- Education, training and exchange of scientists/technology;
- Establishment of a central data bank for development of programs of the organization and dissemination of technical and other information relating to the programs and activities of the Organization.
- Other cooperative programs agreed upon by the Member States.



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The Activities of APSCO

• Education and Training Program

- Training Course on Remote Sensing Technology and Applications for Mongolia / Indonesia held in May 2005, Beijing .
- Training Course on Satellite Technology and Spacecraft Project Management held in June 2005, Beijing.
- Training Course on Reception Stations of FY Satellite Data Broadcasting System (DVB-S) held in July 2006 in Beijing.
- Training Course on Space Technology Applications held in 2007, Peru.
- Nine-Month Master Program on Space Technology Applications held from 10 July 2006 to 10 April 2007, Beijing.



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- Training Course on Data Processing and Applications on Remote Sensing Satellite was held from May 11-22, 2009, Beijing.





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APSCO Training Course on GNSS and its Application in Peking University

- June 4, 2010 The 18 days duration training starting from was sponsored by APSCO as principle organizer and co-sponsored by Ministry of Industry and Information Technology (MIIT) of China and organized by Peking University, Beijing, China. There were 18 participants from the Member States like Bangladesh, China, Iran, Mongolia, Pakistan Peru and Thailand as well as interested nation like Ukraine.





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Master Program on Space Technology Application (MASTA 2010) for APSCO Member States

Based on the agreement between APSCO and The International School of Beihang University, Beijing, China, the APSCO would invite participants from its Member States to take Master Program on Space Technology Application, which starts from September 2010. (Below: Graduation Ceremony of MASTA 2008 in Beihang University)





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•Workshop/Symposium



- The International Symposium on Space Cooperation for the Asia-Pacific Region held during July 20-24, 2009, Thailand.
- The International Symposium on Food Security and Monitoring of Agriculture Through Satellite Technology held during September 21-24, 2010, Pakistan.



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•Space Cooperation - DVBS

Donation Ceremony of Reception Stations of FY Satellite Data Broadcasting System (DVBS) to 7 Signatory States to APSCO Convention by the Chinese Government was held on 24 March in Beijing .





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•Space Cooperation - SMMS

On September 6th of 2008, 30 delegates from 9 Signatory States witnessed the **Launch of the Environment and Natural Disaster Monitoring Satellite (HJ-A, also named as Small Multi-Mission Satellite)** at Taiyuan Launching Center.





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Space Cooperation – KABES/SMMS Receiving Station in Thailand

In December of 2008, Dr. Zhang Wei witnessed the Commissioning of KABES/SMMS Receiving Station in Thailand.





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• Space Cooperation - Ground Station in Thailand

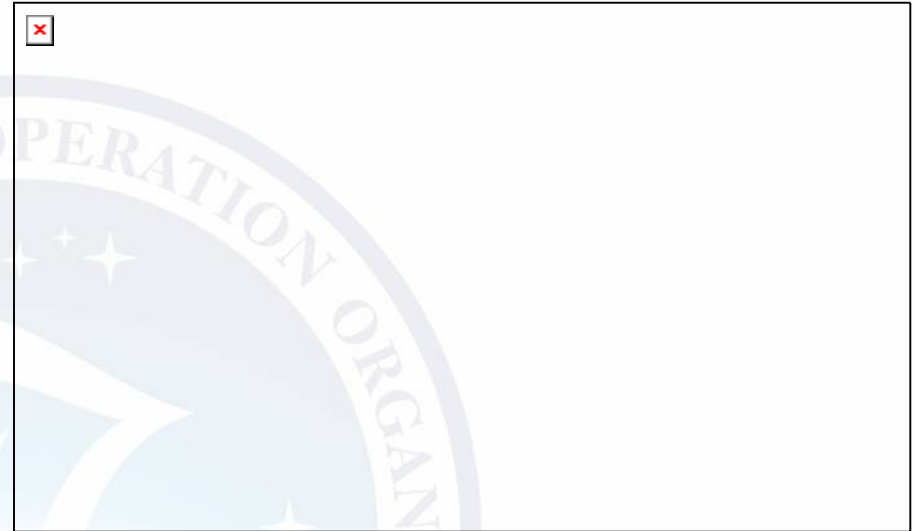


- On 21 December 2009 ,under the Cooperation Framework of APSCO, Center for Resources Satellite Data and Applications (CRESDA) signed the agreement with the Government of Thailand, to build the Receiving Station of SMMS Satellite in Bangkok.



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Space Cooperation – The feasibility study of projects by experts of MS





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• **Projects approved by the Council Meetings**

- (1) Establish the Spatial Data Sharing Service Platform and Its Application Pilot Project;
- (2) Proposal for APSCO Applied High Resolution Satellite Project;
- (3) Research on Atmospheric Effects on:
 - (i) Ka Band Rain Attenuation Modeling;
 - (ii) Ionosphere Modeling through Study of Radio Wave Propagation and Solar Activity;
- (4) Development of Asia-Pacific Ground Based Optical Satellite Observation System (APOSOS);
- (5) Feasibility Study of the Applications of Compatible Navigation Terminal System;
- (6) Short-term Training Course on Satellite Technologies
- (7) Telecommunication Satellites
- (8) Small Student Satellites joint development among University of MS



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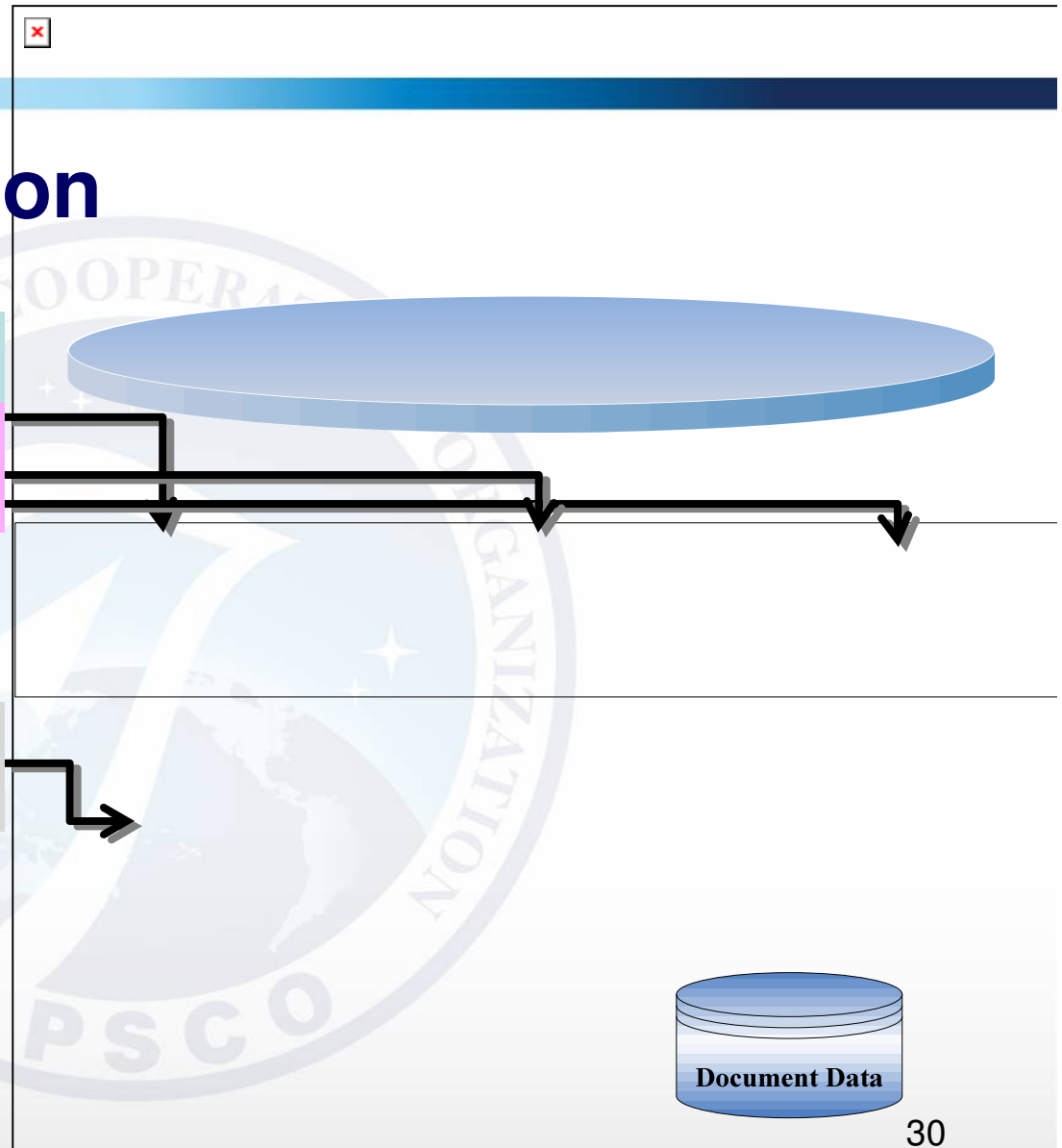
Data Sharing Platform

System Description

1. User Service and

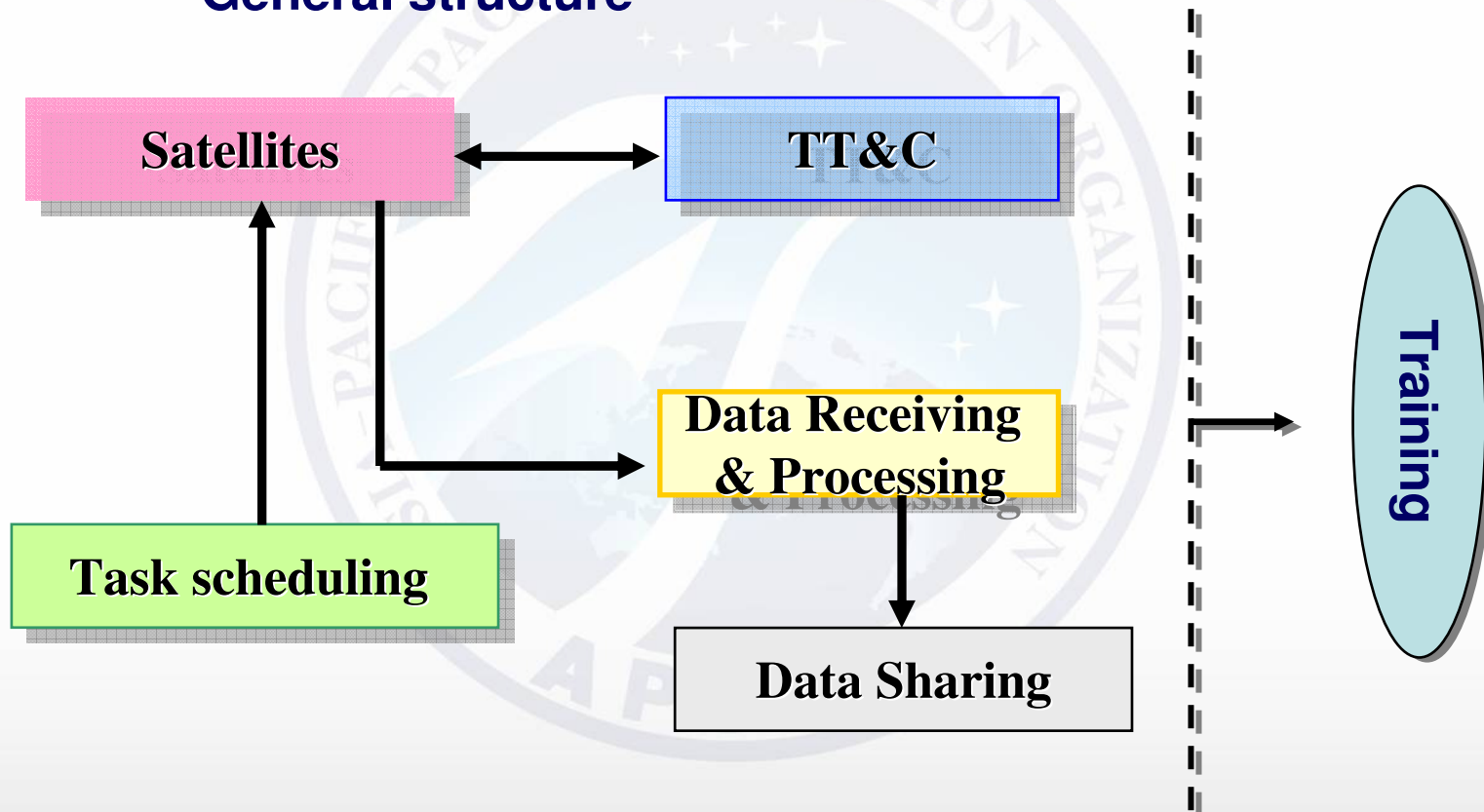
3. Distributed Retrieval
Subsystem

4. Data Management
Subsystem





General structure





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Key Technical Topics

-System Configuration and Specification

1. Orbit parameters
2. Imaging modes
3. Mission Planning

-Space Segment System Specification

1. Payload
 2. AOCS
 3. Structure and Thermal Control
 4. Data Transmission System
 5. TT&C
 6. Propulsion
 7. OBDH
-

- Minimum Requirement Case(2 Meter H.R + WFI+HSI)

Sat 1: Two 2/8mPan/MSI+HSI

Sat 2: 2/8mPan/MSI+16mWFI



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Research on Atmospheric Effects

Ka Band Rain Attenuation Modeling and Ionosphere Modeling through Study & Radio Wave Propagation and Solar Activity

- **Lead Country : Thailand**
- For Atmospheric Effects on Ka Band Rain Attenuation Modeling, the objective is to develop the Ka-band rain attenuation model suitable for member states and compare it with current ITU-R model.
- For Atmospheric Effects on Ionosphere Modeling through Study of Radio Wave Propagation and Solar Activity, the objective is to develop the ionosphere models based on the measured data from the radio wave at different frequency reflecting from ionosphere due to solar activity suitable for Asia-Pacific region.



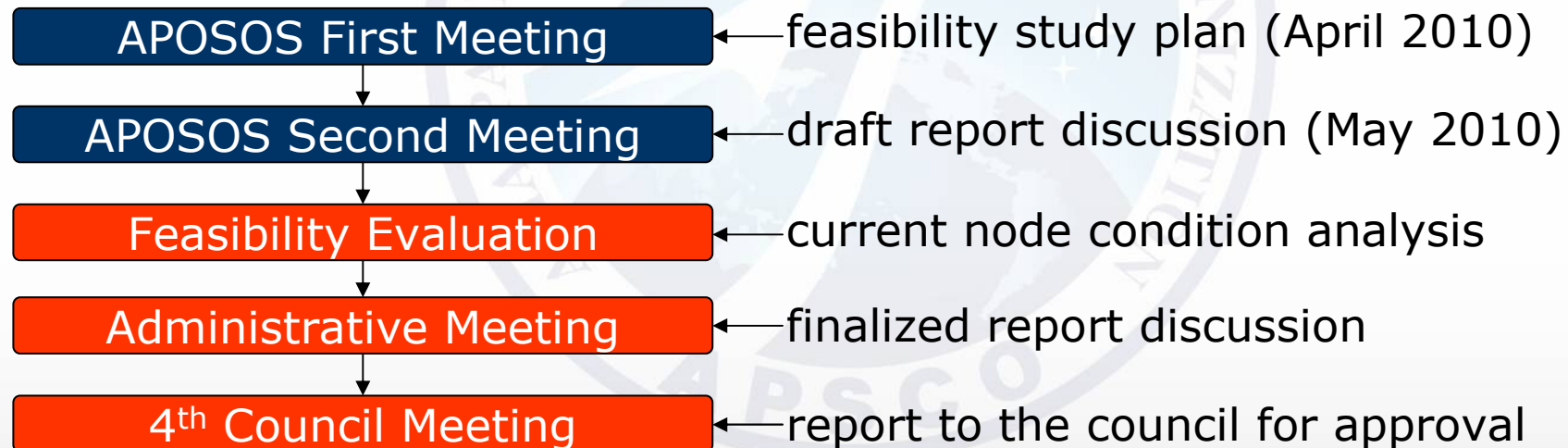
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Asia Pacific Ground Band Optical Satellite Observation System (APOSOS)

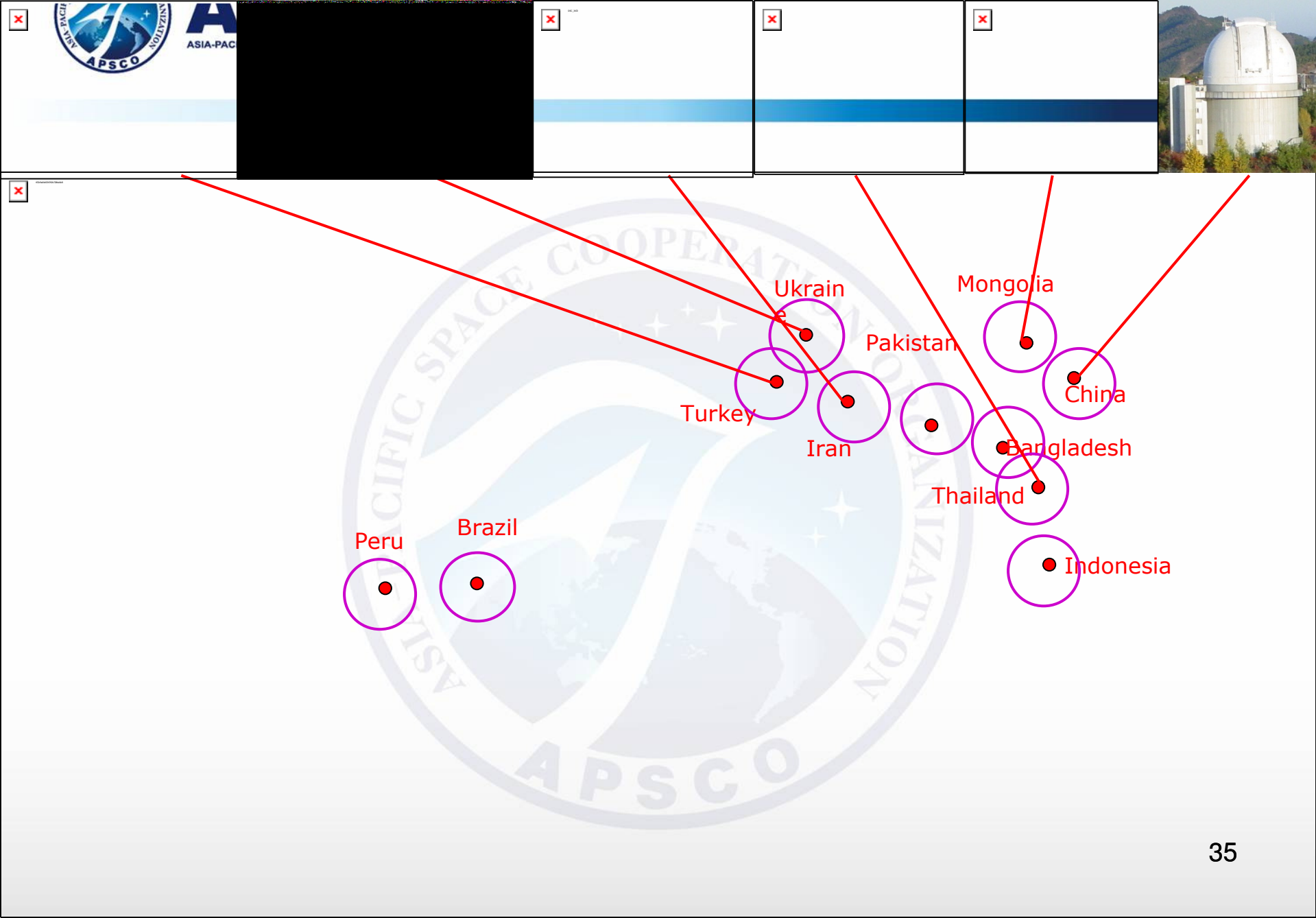
Leading country: China and Turkey

1. **Objective:** The basic objective is to build the network with existing facilities, with the aim of finding objects and space debris in orbit for research purposes.
2. **Benefit:** This network will derive benefit from the wide geographical distribution of APSCO countries and sharing the data in participating countries.

3. Schedule:



4. Existing Infrastructures and Potential Nodes





13 Proposed Projects

- 8 were concerned with the construction of navigation application system

1	Development and Demonstration of the Applications of Compatible GNSS Terminals for Emergency Management and Disaster Rescue
2	Vessel Safety and Rescue Information System
3	Public Switching Platform for Key Commercial Vehicles Dynamic Information
4	Bridge Health and Safety Monitoring System
5	BeiDou Yuheng Container Terminal Operations Monitoring and Controlling System
6	Dynamic Traffic Information Service System
7	Network RTK system for the application of urban fundamental construction
8	Location Based Intergraded Work Safety supervision System



4 were concerned with satellite navigation application technology and product R&D

1	Multimode navigation chips and navigation end products applied in compatible navigation systems
2	Satellite Navigation Simulation and Test system
3	LBS technology
4	Software Compass/GPS Receiver

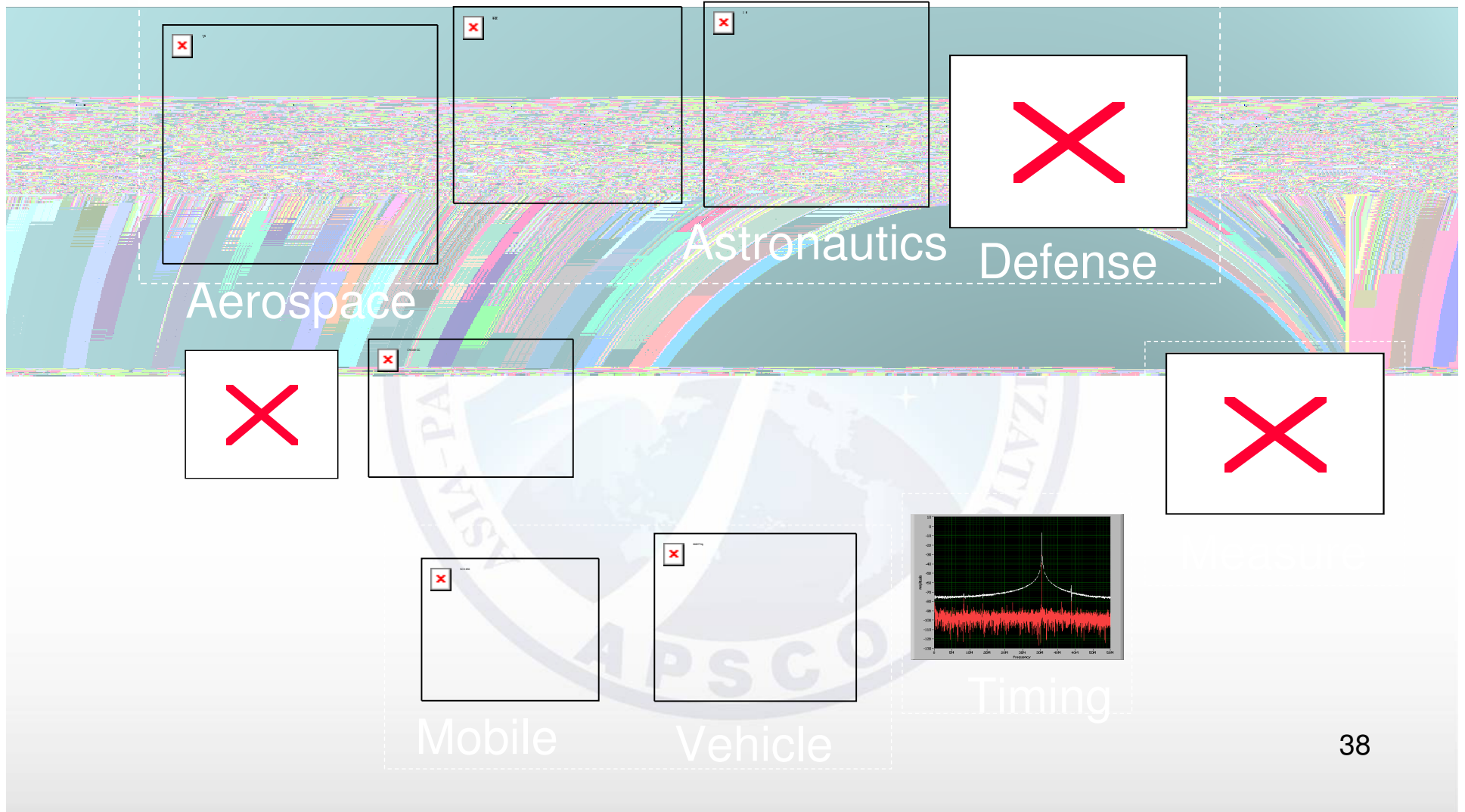
1 project was concerned with the construction of satellite navigation augmentation system

1	APSCO Satellite Based Augmentation System
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Application Systems





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International Communications

- During June 13-14, 2009, Dr. Zhang Wei paid a visit to SUPARCO in Pakistan.





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International Communications

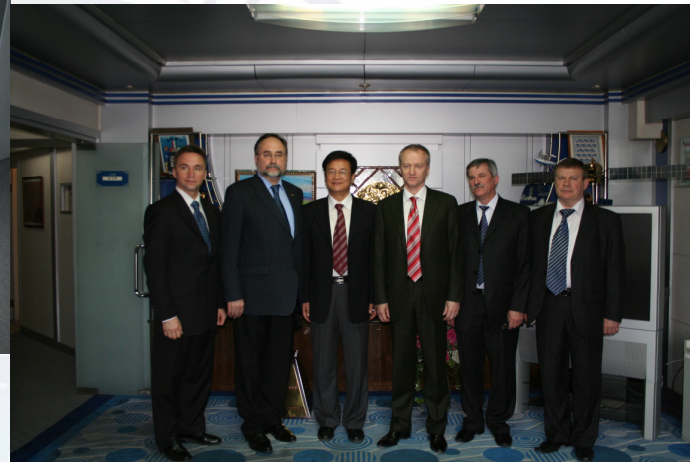


- On 1 September 2009, LAPAN Delegation from Indonesia visited APSCO.
- Discussion on Long-Distance Education by using Satellite.
- Technical visits arranged by APSCO.



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International Communications



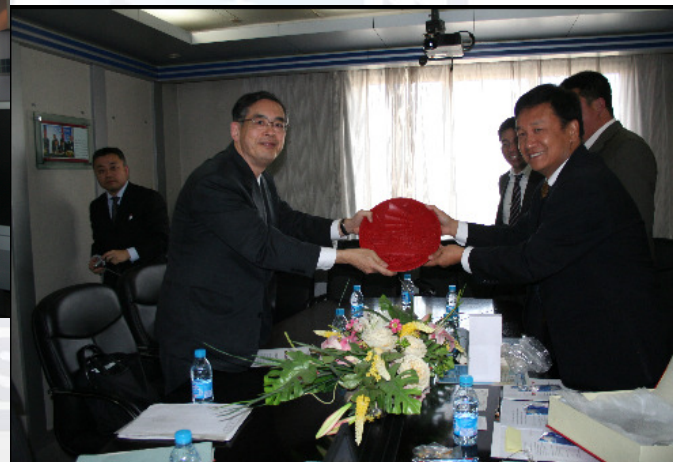
- Mr. O. Zinchenko headed his Ukraine National Space Agency Delegation visited APSCO, on 14 April 2009.



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International Communications

On October 19 of 2009, APSCO received a delegation from Japan Aerospace Exploration Agency (JAXA), which was headed by Vice President Mr. Yukihide Hayashi.





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International Communications

- On 29 October 2009, ESA Deputy Director General for Earth Observation and Director of ESRIN Dr. Liebig visited APSCO





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International Communications

- During November 8-11, 2009, Dr. Zhang Wei attended UN/APSCO/IRAN workshop on Space Law “Role of Space Law in the Development and Strengthening of International and Regional Cooperation of Status in the Peaceful Exploration and Use of Outer Space ”in Tehran.





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Future APSCO Space Law Activities

APSCO Research Center for Space Law

- Research in the principle of space law
- Research in the UN Treaties related to space
- Research in individual national space laws
- Research in specific interested countries on space law
- Research on bilateral and multilateral space cooperation
- Cooperation with UN and UN/COPOUS in space law
- Cooperation with regional/international space organization in space law



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International Communications

- APSCO Delegation visited LAPAN, Indonesia during December 1-6, 2009.
- Mr. Bambang Teja Sukmana, the Deputy Chairman of LAPAN received the delegation.
- Visit to the space-related facilities.





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APSCO Orientation Tour

- On 12 January 2009, 13 relevant countries' diplomats were invited for a visit of APSCO facilities and briefing.
- Ambassador of Bangladesh, Columbia and Ukraine honored this event.
- Diplomats from Japan, Korea, Brazil
- All potential countries are welcome to join APSCO and its activities!





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APSCO meets UN/ESCAP



- On February 1, 2010, Mr. Xuan Zengpei, Director of ICT and Disaster Risk Reduction Division of United Nations Economic and Social Commission for Asia and the Pacific (UN/ESCAP) and Mr. Wu Guoxiang, Chief of Space Application Section of ICT (UN/ESCAP) visited APSCO headquarter in Beijing and held productive discussion with APSCO Secretary-General and all APSCO staffs.



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Experts meet in Beijing for APSCO projects

- On March 29, 2010, experts from APSCO Member States as well as interested nations meet in Beijing for a two week discussion for a possible sketch of APSCO multilateral cooperation project future scenario.





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Prague during IAF Congress



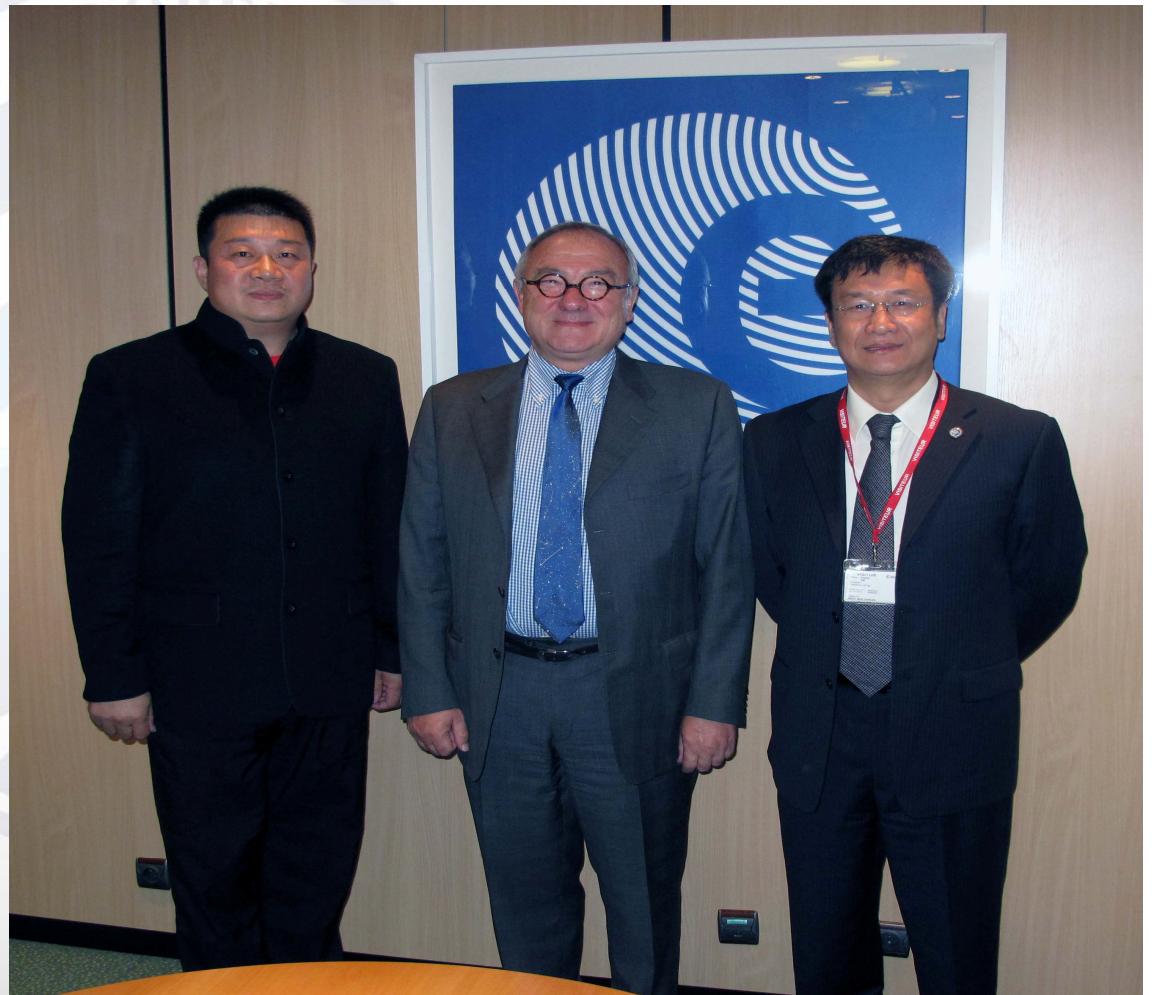
The International Astronautic Federation (IAF) Congress of 2010 was held in Prague, Czech Republic during September 27 to October 1. It is a major annual space event with government officials and industry from all regions take part. During the IAF Congress, APSCO representatives take apart in the opening ceremony and the touring of Exhibitions.



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APSCO visits ESA

- On 24th of September, 2010, APSCO delegation headed its Secretary-General Dr. Zhang Wei visited Paris and the ESA Headquarter for an official meeting with the ESA Director General Mr. Jean-Jacques Dordain.

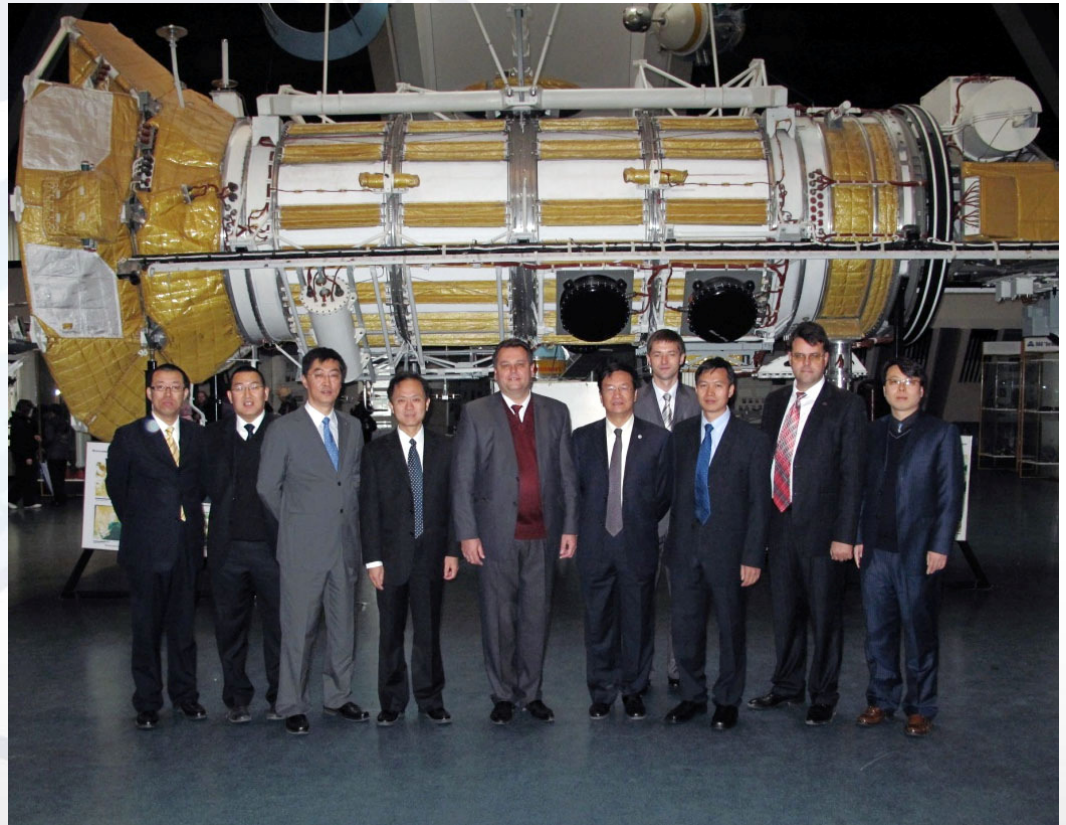




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APSCO Visit Ukraine

- 2010/10/08 to 2010/10/10, Dr. Zhang Wei, Secretary-General of APSCO headed the delegation paid a successful visit to NSAU and YUZHNOYE in Ukraine.

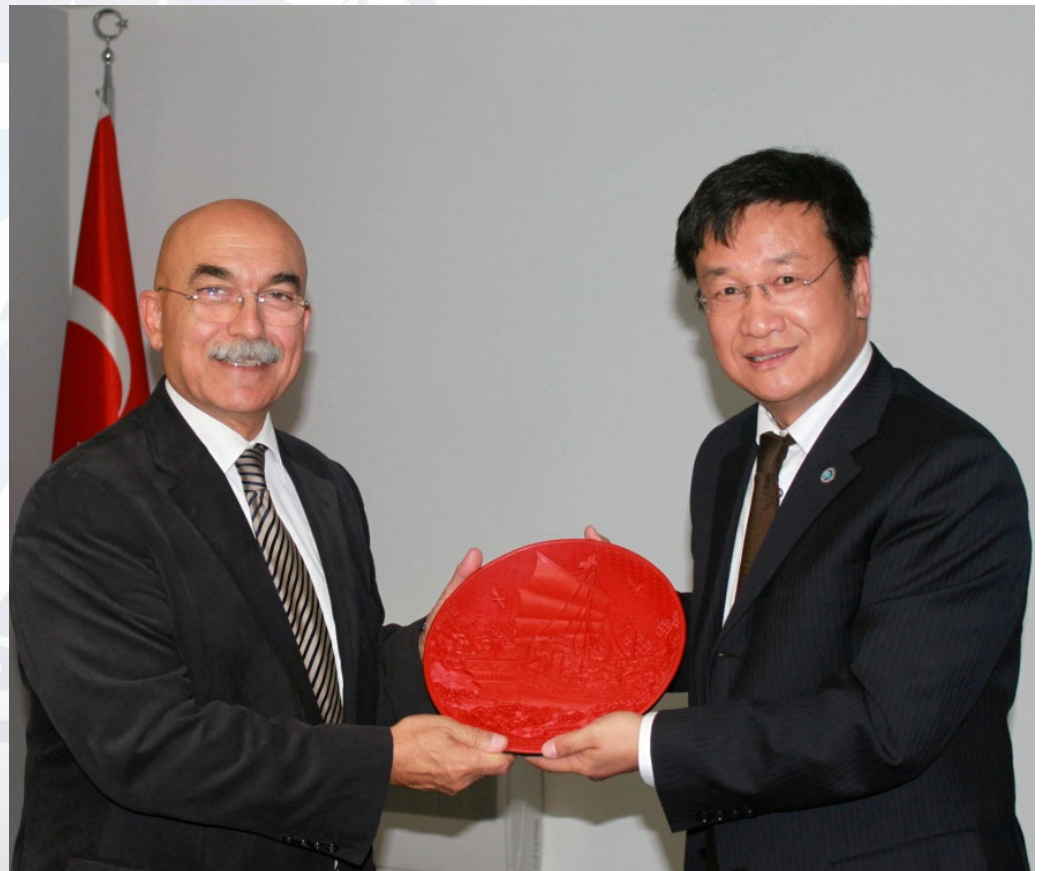




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APSCO Visit Turkey

- 2010/10/11 to 2010/10/15, Dr. Zhang Wei, Secretary-General of APSCO headed the delegation paid a successful visit to TUBITAK UZAY, TUBITAK Headquarter and Istanbul Technical University in Turkey.





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Russian Space Agency Representative Office in Beijing Visited APSCO

- October 26, the Federal Space Agency of Russia and its representatives in Beijing visited APSCO.





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APSCO joined GEO

- APSCO participated in the 7th GEO meeting
- GEO granted APSCO permanent observer status
- Future cooperation with CEOS, Charter ect.



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UN-OOSA Director Visited APSCO

Dr Mazlan Othman Director, UN-Office for Outer Space Affairs visited at 9th, Nov, 2010 the APSCO Headquarter and had meeting with Secretary General of APSCO Dr. Zhang Wei and International Staffs and discussion about future cooperation.





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UN/Thailand Workshop on Space Law 2010

United Nations Office for Outer Space Affairs, the Government of Thailand, ESA and APSCO attended the workshop on Space Law “Activities of States in Outer Space in Light of New Developments: Meeting International Responsibilities and Establishing National Legal and Policy Frameworks” which was held during 16-19 November 2010 in Bangkok.





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2011 New Year Reception of APSCO

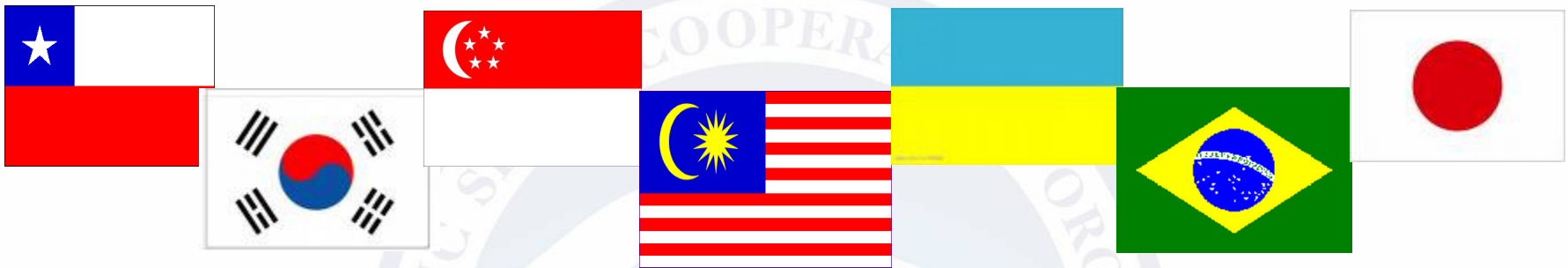
APSCO's 2011 New Year Reception was held on December 9th 2010. Diplomats from different countries and representatives of international organizations in China participated in this event in Kempinski Hotel, Beijing. During the Reception, presentations and photo of the APSCO Activities was presented to the 150 participants.





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Organization Expansion



- Regional space agency;
- Regional oriented space program for social and economical benefit;
- Member country capacity building and data sharing;
- Pooling of human and financial resource;
- Sharing of infrastructure and avoid duplications;
- Prominent international statues in space community;
- More substance to other regional mechanism such as APEC, SCO, ASEAN and ESCAP;
- Inviting all countries in Asia Pacific to join APSCO!

Bangladesh

ধন্যবাদ



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Turkey
teşekkürler

China

谢谢

Thailand

ขอบคุณ

Thank You!

talebzadeh@apsco.int

Iran

با تشکر از شما

Peru
Gracias

Indonesia

Terima kasih

Mongolia

Баярлалаа

Pakistan

آپ کا شکریہ