



Review & Prospect

of Space Science & Technology Training

China National Space Administration (CNSA)

Website: <http://www.cnsa.gov.cn>

Email: cnsa@cnsa.gov.cn



I. Review

Objectives of Training Programs

- 1. To exchange views toward the future cooperation in space activities in Asia-Pacific region;**
- 2. To fully utilize space technology to serve the sustainable economic and social development;**
- 3. To build up the understanding, trust and friendship and establish an effective communication channel among the countries in this region;**
- 4. To increase the personnel quality of space industry so as to reduce the loss due to lack of experiences in space technology and its applications cooperation among the countries in this region.**



■ The 1st Training Course on Satellite Technology

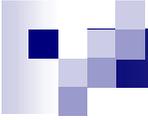
1. **Time:** July 22 - August 20, 2000
2. **Venue:** Harbin, Xi'an, and Beijing
3. **Number of participants: 22**
4. **Number of participating countries: 13** (Bangladesh, Iran, Indonesia, Cambodia, Malaysia, Myanmar, Mongolia, Pakistan, the Philippines and Thailand)
5. **Organizer:** China National Space Administration (CNSA)
6. **Sponsors:**
UNOOSA, UNESCAP
Harbin Institute of Technologies (HIT),
Northwest Polytechnic University (NPU),
Beihang University (BUAA),
Chinese Academy of Space Technology (CAST)



Trainees in Class 2000

Closing Ceremony of the Training Course 2000, Beijing, China





■ **The 2nd Training Course on Satellite Technology**

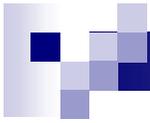
1. **Time:** July 11 - August 10, 2002
2. **Venue:** Beijing, Harbin
3. **Number of participants: 31**
4. **Number of participating countries: 18** (Bangladesh, Brunei, Cambodia, Fiji, Iran, Indonesia, Korea, Laos, Malaysia, Myanmar, Mongolia, Pakistan, the Philippines, Singapore, Thailand, UAE, Uzbekistan, and Viet Nam)
5. **Organizers:** China National Space Administration (CNSA), Secretariat of AP-MCSTA
6. **Sponsors:**
UNESCAP, UNOOSA
Beihang University (BUAA),
Harbin Institute of Technologies (HIT),
Chinese Academy of Space Technology (CAST)



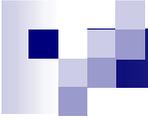
Training Course 2002 in Beijing, China



Trainees visited space institutes and remote sensing application facilities



Opening Ceremony of the Training Course in 2002, Beijing, China



- **The 3rd Training Course on Space technology and Remote Sensing Applications in Environment Monitoring and Disaster Mitigation**

1. **Time:** October 16 - November 18, 2003
2. **Venue:** Shanghai, Beijing
3. **Number of participants: 36**
4. **Number of participating countries: 19** (Azerbaijan, Bangladesh, Brunei, Cambodia, Fiji, Iran, Indonesia, Korea, Laos, Malaysia, Myanmar, Mongolia, Pakistan, the Philippines, Singapore, Thailand, Turkey, Uzbekistan, and Viet Nam)
5. **Organizers:** China National Space Administration (CNSA), Secretariat of AP-MCSTA
6. **Sponsors:**
Harbin Institute of Technologies (HIT),
Beihang University (BUAA),
Shanghai Jiaotong University (SJTU)
Chinese Academy of Space Technology (CAST)

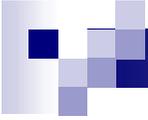


Training Course in 2003, Shanghai and Beijing, China

OPENING CEREMONY OF THE THIRD TRAINING COURSE
OF SPACE TECHNOLOGY AND REMOTE SENSING
APPLICATIONS FOR AP-MCSTA
October 20, 2003, Shanghai, China



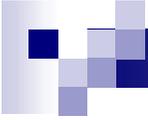
Opening Ceremony of the Training Course in 2003, Shanghai, China



- **China-ASEAN Training Course on Remote Sensing Satellite Technology**

1. **Time:** July 18 - August 1, 2004
2. **Venue:** Beijing (Jade Palace Hotel)
3. **Number of participants: 23**
4. **Number of participating Countries: 11** (Brunei, Cambodia, China, Indonesia, Laos, Malaysia, Myanmar, the Philippines Singapore, Viet Nam, and Thailand)
5. **Organizers:** CNSA, Secretariat of AP-MCSTA, ASEAN Secretariat
6. **Sponsors:**
Chinese Academy of Space Technology (CAST)
Beihang University (BUAA),
Harbin Institute of Technologies (HIT).





- **SMMS Technical Training Course on Spacecraft Project Management**

1. **Time:** January 6-10, 2005
2. **Venue:** Bangkok (Maruvy Hotel)
3. **Number of participants: more 40** (All the participants are come from different agencies, ministerial department, Institutes and Associations of Thailand.)
4. **Organizers:** CNSA, Secretariat of AP-MCSTA, Thai Ministry of Information, Communication Technology
5. **Sponsors:**
Chinese Academy of Space Technology (CAST)
Kasetsart University of Thailand



- **The 5th Training Course on Satellite Technology and Spacecraft Project Management**

1. **Time:** June 19 - August 3, 2005
2. **Venue:** International Training Center (CAST, Beijing)
3. **Number of participants: 21**
4. **Number of participating Countries: 11** (Brunei, Bangladesh, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Peru, Viet Nam, and Thailand)
5. **Organizer:** CNSA, Secretariat of AP-MCSTA,
6. **Sponsors:**
Chinese Academy of Space Technology (CAST)
Harbin Institute of Technologies (HIT).



Participants numbers to the six training courses

Country	Total	Country	Total
Bangladesh	6	Myanmar	7
Brunei	6	Nepal	2
Cambodia	8	Pakistan	11
China	17	Philippines	8
Fiji	3	Singapore	6
Iran	6	Sri Lanka	2
Indonesia	16	Thailand	47
R. O. Korea	4	Turkey	3
Lao PDR	9	U.A.E.	3
Malaysia	11	Uzbekistan	3
Mongolia	12	Vietnam	11
Total	98		103

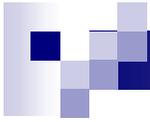


Training activities lately

- Asia Regional Training Course on Satellite Remote Sensing Technology Applications for Disaster Management and Environmental Monitoring

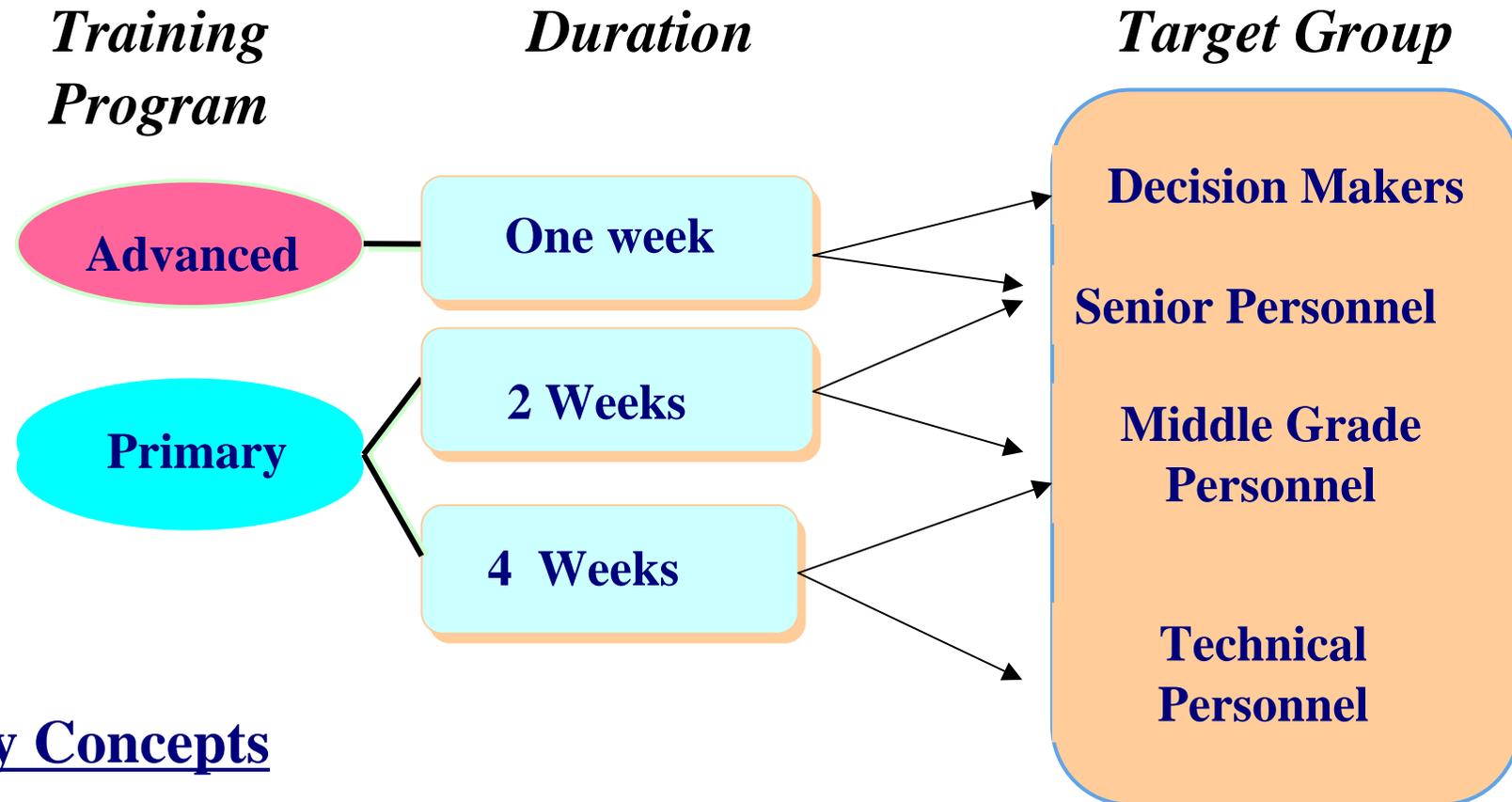
The specific contents are as follows:

- Main features of natural disasters in the Asia-Pacific region and disaster-reduction needs in the region ;
- Satellite remote sensing technology and its applications in disaster management , with specific reference to Small Multi-mission Satellite (SMMS), the Environmental and Disaster Monitoring Constellation (EDMC) ;



- Applications of satellite remote sensing technology in environmental monitoring and protection, early warning and reduction of disasters as well as post-disaster rescue operations;
- Applications of satellite remote sensing technology in monitoring different kinds of disasters (including floods, earthquakes, sand storms, droughts, plant diseases and pests infestation and disastrous snowfalls etc.) ;
- Operational principles and designing of satellite sensors, remote sensing image receiving systems as well as image processing systems (Ground Receiving Stations).
- Marine applications of satellite remote sensing technology.

Framework of Training Programs



Key Concepts

- ✓ Real-world applications, experiences, practices
- ✓ Use research areas familiar to participants
- ✓ Provide data to share with colleagues



Primary Training Programs

- **2 Weeks:**

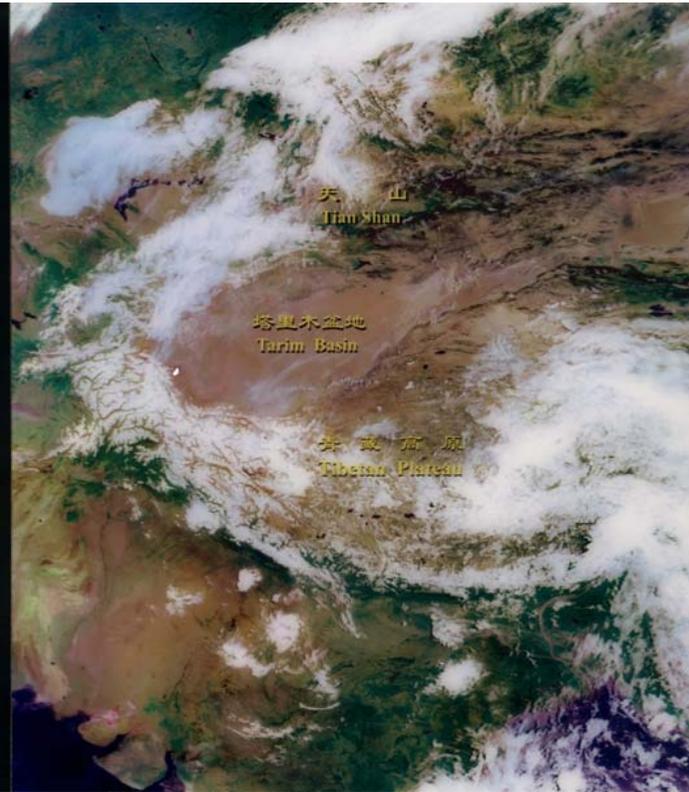
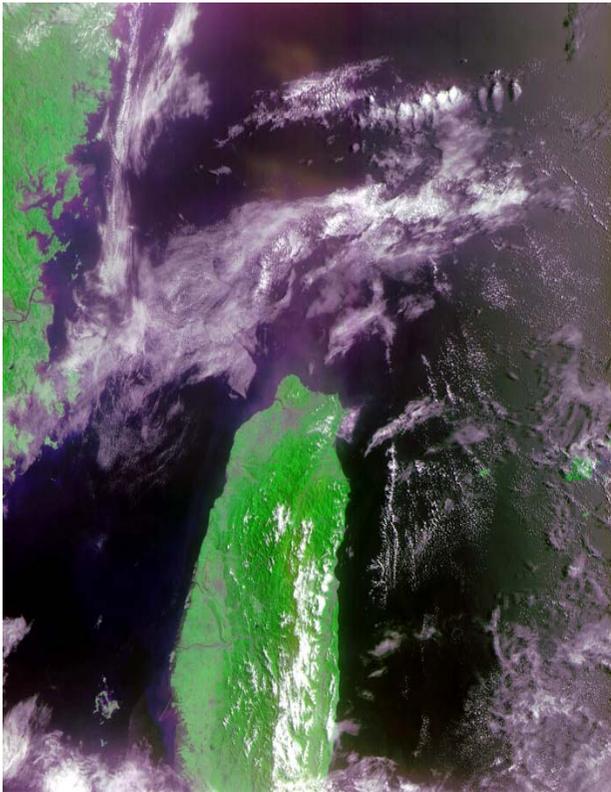
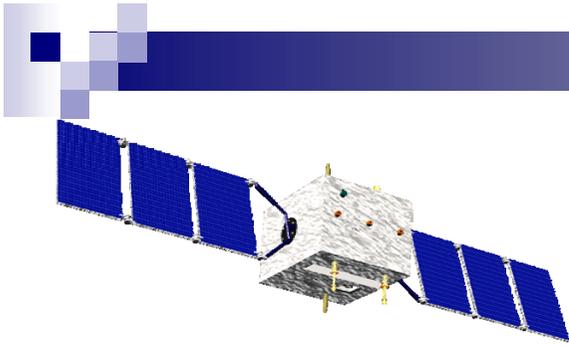
- ✓ Applications of remote sensing satellites in environment monitoring and disaster management;
- ✓ Basic satellite technology and design cases;
- ✓ Optical and microwave remote sensing principles and remote sensor design;
- ✓ Remote sensing data processing, images receiving system and application system.



Primary Training Programs (continued)

■ 4 Weeks:

- ✓ Applications of remote sensing satellites in environment monitoring and disaster management;
- ✓ Basic satellite technology and design cases;
- ✓ Optical and microwave remote sensing principles and remote sensor design;
- ✓ Remote sensing data processing, images receiving system and application system.

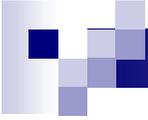


The Examples of Space Technology Applications were Introduced



III. Future Plans

1. In further cooperation with UN and the Secretariat of AP-MCSTA, CNSA are making preparations for setting up the **Asia-Pacific Space Science and Technology Education Center** in Beijing, which will be in close cooperation with UN;
2. CNSA will continue to organize training courses on space science, space technology and its applications, and space project management, such as with UN/ESCAP, ASEAN Secretariat.



III. Future Plans (continued)

4. CNSA is calling proposals for multilateral or bilateral cooperation (E-learning, Disaster management, Positioning Experiment, etc.) with countries in Asia-Pacific region.
5. CNSA is preparing to set up Asia-Pacific Space Science and Technology Education Center, in cooperation with the future Asia-Pacific Space Cooperation Organization (APSCO).



Asia-Pacific Space Science and Technology Education Center

The objectives of the Center are

- ✓ To promote the use of space technology in solving problems of a regional and global nature;
- ✓ To further strengthen the capability in the use of space-related technologies for economic, social and cultural development



Asia-Pacific Space Science and Technology Education Center

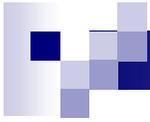
The Center

- ✓ is an educational and research institution that is capable of high attainments in the development and transmission of knowledge in the field of space science and technology.
- ✓ will offer **distance education, short-term training, and degree education** through pooling together all advantages of universities, institutes, laboratories, etc of Asia-Pacific countries.



Master Programme on Space Applications (MASA)

- In order to translate the recommendation of the United Nations Programme on Space Applications (UN-PSA) into an operational programme, the Center initiates the Master programme on Space Application (MASA) for Asia-Pacific applicants. MASA is designed for students, researchers, and professionals interested in beginning a career in the space sector or improving their position within it.



- MASA is entrusted by Chinese government and principally supported by Chinese aerospace institutes and organization, such as China National Space Administration (CNSA), Ministry of Education of the People's Republic of China, Chinese Academy of Science (CAS), and Chinese Academy of Aerospace Technology (CAST), etc.



MASA is designed to give participants a competitive edge by:

- Broadening knowledge of space-related issues and activities.
- Developing the skills necessary for working effectively with colleagues from a diverse range of disciplines and cultures
- Placing participants at the heart of the industry through contact with space professionals
- Putting to use acquired knowledge and skills through practical, hands-on experience