

Welcome Global Space Community

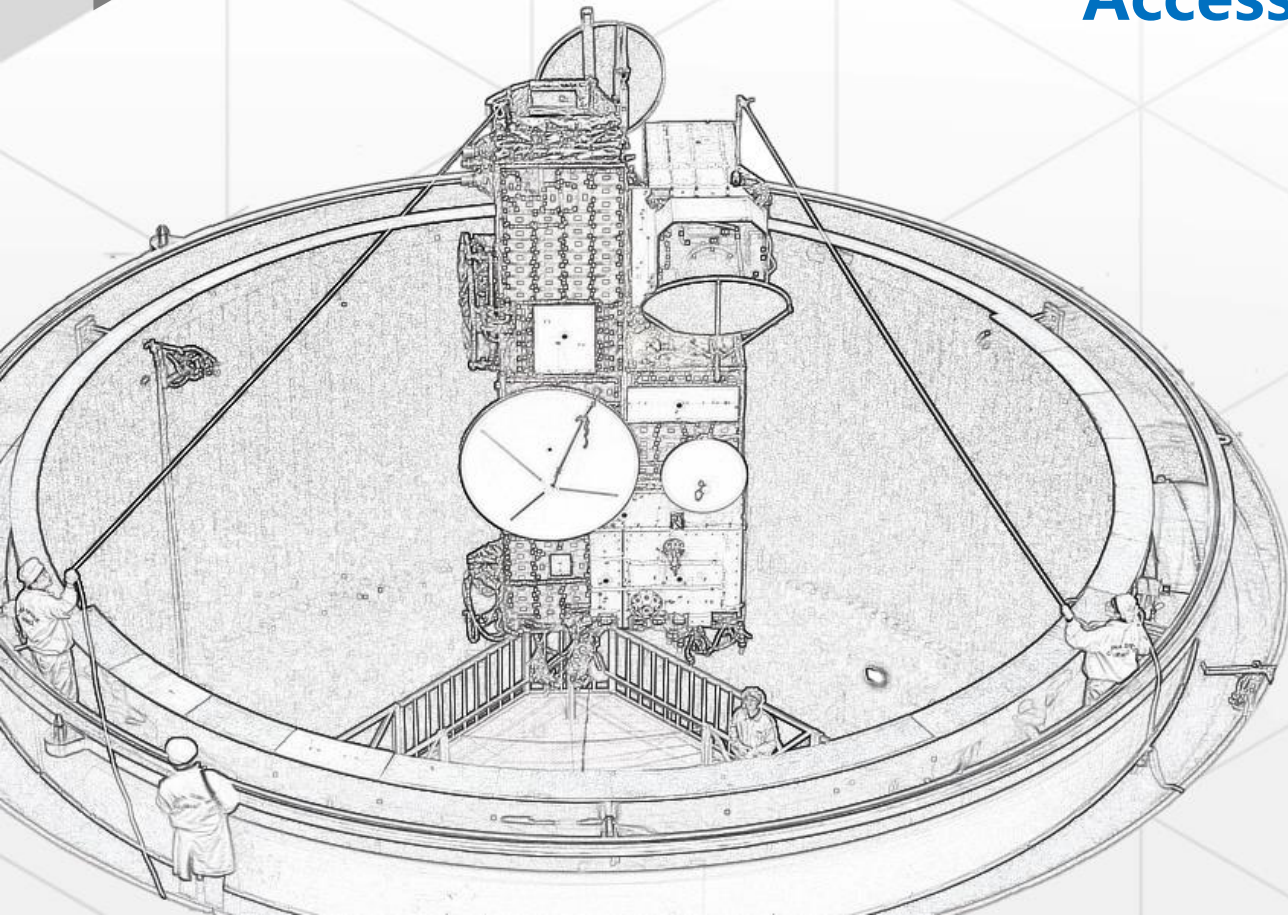
Access to Satellite AIT Center CNSA

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China National Space Administration

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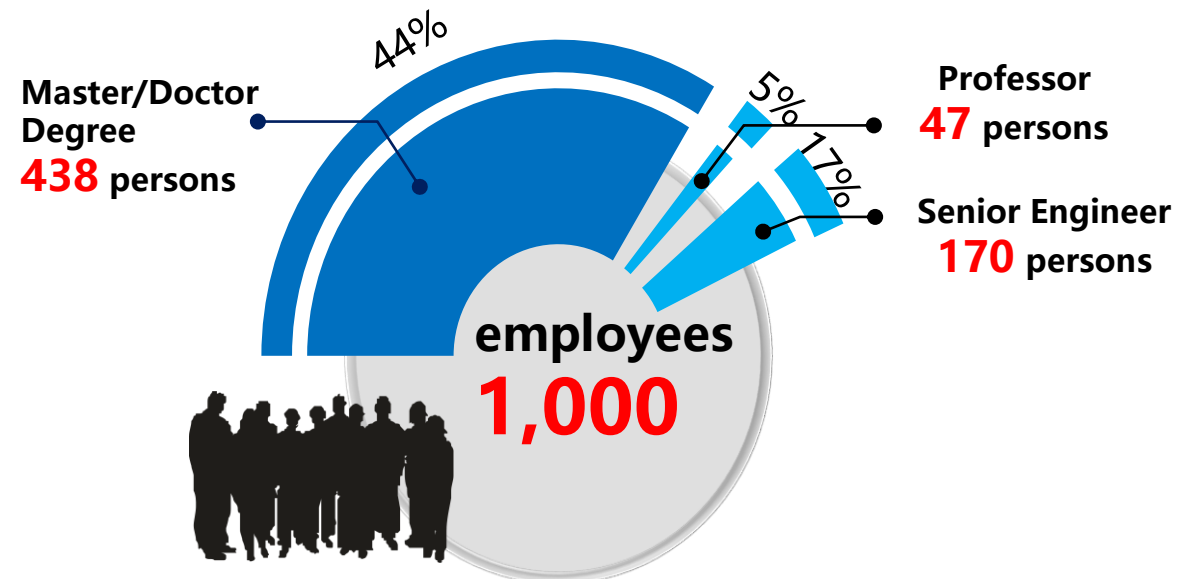
01

PART 1
PROFILE

1 PROFILE

Basic Information

- Satellite AIT Center, China National Space Administration (CNSA), approved by CNSA in 2017, supported by BISEE, Founded in **1968**
- Total 293 satellites delivered in-orbit up to 2019.
- R&D of ground mechanical/thermal/EMC/MGSE/EGSE equipment since 1960s.
- Involved in system AIT and equipment environment test for,
 - Telecommunication Satellites
 - Remote Sensing Satellites
 - Navigation Satellites
 - Lunar/Martian spacecrafts
 - Manned Spaceships/space station



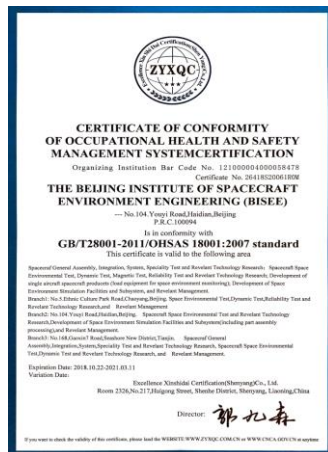
1 PROFILE

Certificates and Standards

QMS Certificate & Health & Safety Certificate
Registered by ISO9000 and AS9100 Quality Management System



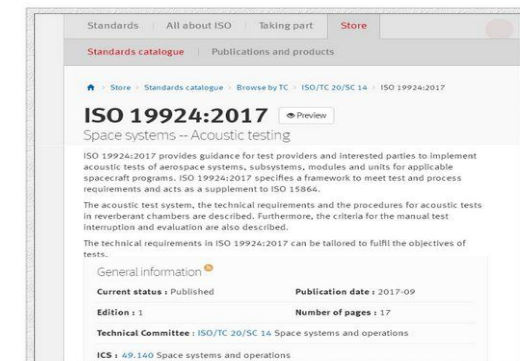
AS9100



OHSAS 18001:2007
Health and Safety Management System Certification

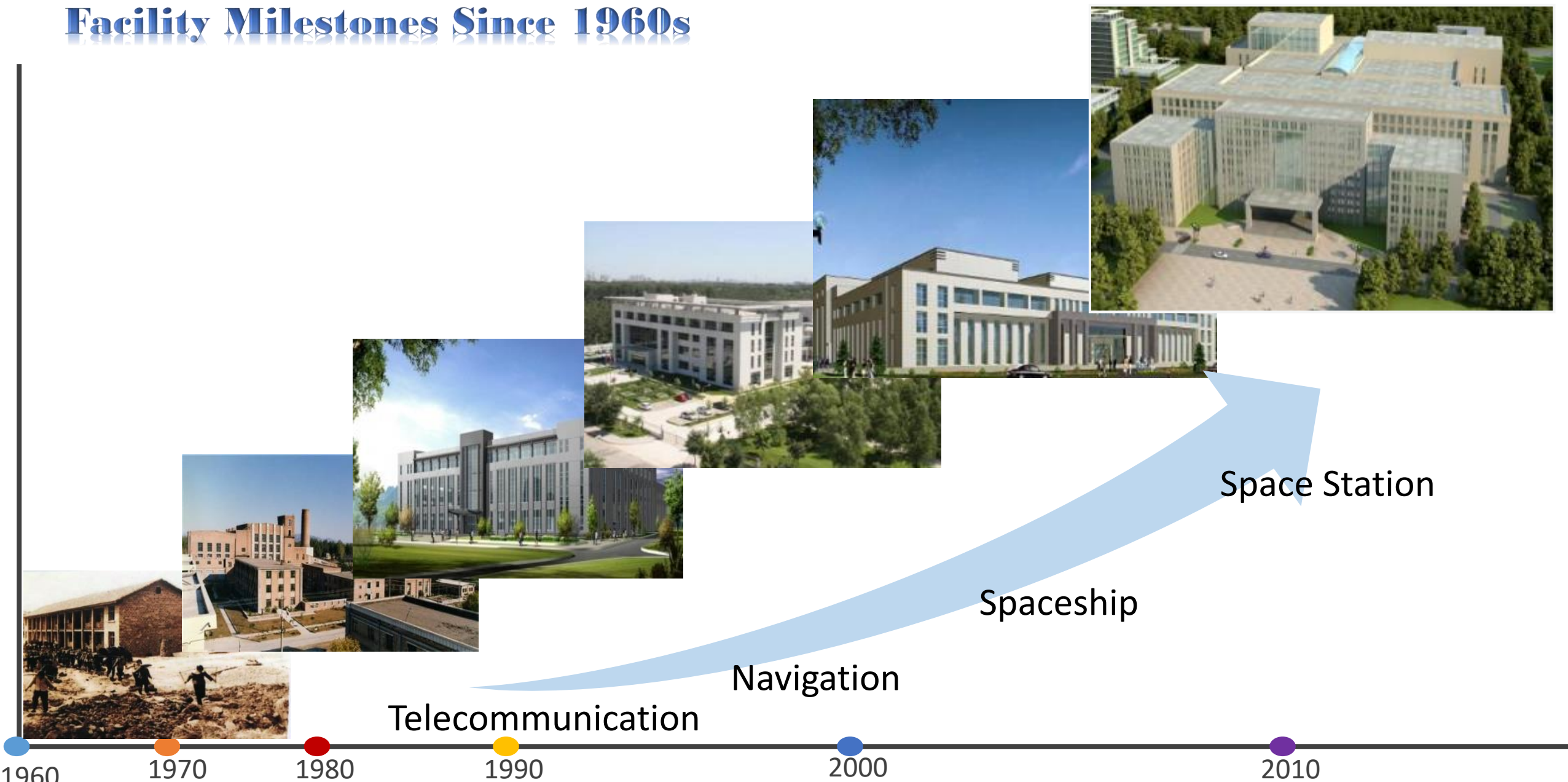
International Standards

- **Officially released**
- ISO19924 Space Systems - Acoustic Testing
- ISO21494 Space Systems - Magnetic Testing
- **FDIS registration phase**
- Space Systems - Vibration Testing,
- Space Systems - Micro-vibration Testing
- Space Systems - Thermal Testing, Testing.
- **3 standards entered preparation procedure.**



1 PROFILE

Facility Milestones Since 1960s





02

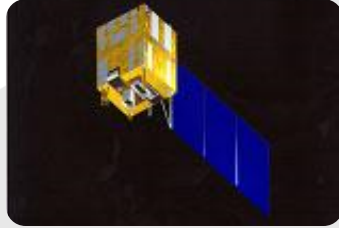
PART 2

COOPERATED PROGRAMS

2 COOPERATED PROGRAMS

2.1 International Programs

CBERS
 Brazil
 AEB
 1988-2019



SINOSAT
 France
 THALES
 2011



CFOSAT
 France
 CNES
 2017



CSES
 Italy
 ASI
 2018



Chinese-French Oceanography Satellite (CFOSAT), 2017

Country	Project	Category
Pakistan	Paksat-1A	Tele Sat.
	PRSS-1	EO Sat.
Egypt	Mirsat-2	EO Sat.
Venezuela	VRSS-1	EO Sat.
Bolivia	Tupak Katari	Tele Sat.
Laos	LaoSat-1	Tele Sat.
Algeria	Alcomsat-1	Tele Sat.
Brazil	CBERS Series	EO Sat.
Belarus	Belintersat-1	Tele Sat.
APT Satellite Holdings Limited	APT-6C, 6D	Tele Sat.
Indonesia	Palapa N1	Tele Sat.



2 COOPERATED PROGRAMS

2.1 International Programs(Continued)



Russian GUV-600 TVC(Φ 8m, 10m(L)), 2011



Pakistani TVC-BZ1200 TVC (Φ 1.5m, 2m(L)), 2017

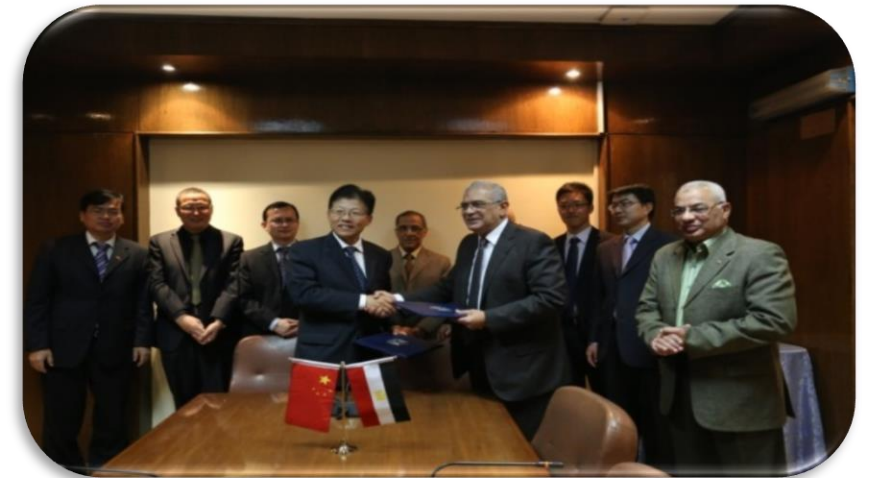
2 COOPERATED PROGRAMS

2.1 International Programs(Continued)

Egyptian Satellite AIT Center Project, 2021

The Egyptian Satellite AIT Center is an important infrastructure to meet the development of Egypt's space, which is located in the Space City of New Cairo, Egypt.

- System AIT Building (about 6700 m²)
- Clean room
- Shaker
- Thermal vacuum chamber
- EMC chamber
- Optical lab
- Two 600kg satellites in parallel







2 COOPERATED PROGRAMS

2.2 Training & Seminars

Experiences on theoretic training and on-site operation training



-  Pakistan
 - PAK-1R Satellite Program, system AIT training provided;
-  Nigeria
 - NIG-1 Satellite Program, system AIT training provided;
-  Russia
 - GVV-600 TVC Program(Russia, JSC-ISS), thermal vacuum chamber operation training provided;
-  Egypt
 - NARSS AIT Center Program, system AIT training provided

2 COOPERATED PROGRAMS

2.2 Training & Seminars(Continued)

Experiences on theoretic training and on-site operation training

No.	Contents	No. of trainees	Country	Year
1	China-ASEAN spacecraft basic courses training	25	10 countries from ASEAN	1997
2	China-ASEAN spacecraft engineering training	28	10 countries from ASEAN	2000
3	China-Asian pacific spacecraft techniques training	54	10 countries from ASEAN & Middle East	2002
4	China-ASEAN remote sensing spacecraft technology training	23	10 countries from ASEAN	2004
5	China-ASEAN spacecraft project management training	30	10 countries from ASEAN	2004
6	China-Asian pacific spacecraft technology & spacecraft project management training	21	11 countries from ASEAN & America	2005
7	China-Nigeria spacecraft professional training	50	Nigeria	2005
8	Spacecraft diploma education and spacecraft professional training	90	South America	2007
9	Pakistan-1R KHTT training	61	Pakistan	2009
10	Satellite manufacturing training	52	South America	2012
11	Satellite Application technology training	42	South America	2012
12	Satellite AIT training	60	South America	2013
13	Egyptian satellite AIT training	20	Egypt	2017



2 COOPERATED PROGRAMS

2.2 Training & Seminars(Continued)

- Together with ASI, ESA and JAXA, BISEE hosted the 5th and the 6th International Workshop on Verification and Testing of Space Systems in 2016 and 2019, respectively.
- Keynote speech on “*Chinese Industry Practice for Space Capacity Building UNISPACE +50*” Feb 2018, Satellite AIT Center of CNSA is supporting UNOOSA for a sustainable development by sharing its facility with international community.



03

PART 3
EXISTING CAPACITY

3 EXISTING CAPACITY

3.1 Summary

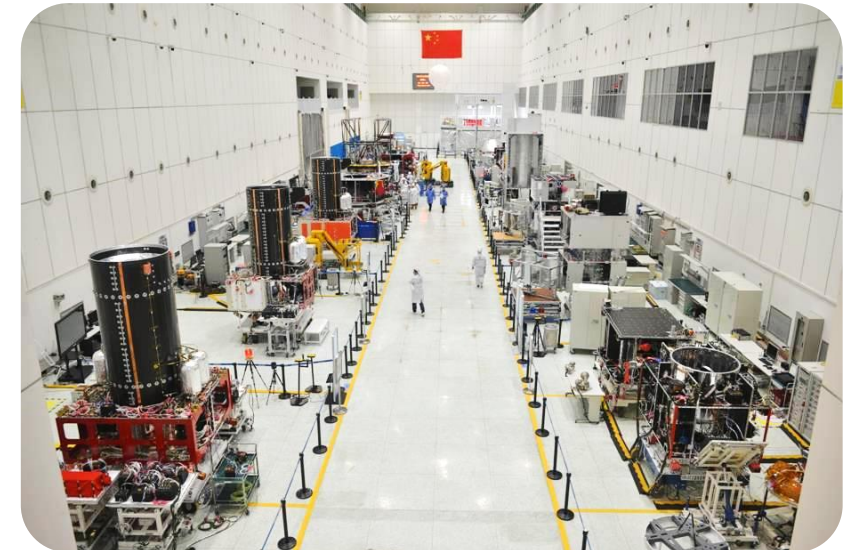
System AIT & Equipment Environment Test

- Full-range spacecrafts AIT
- Delivery of flight modules
- Equipment environment test
- Mission specific test
- International Facilities
- Technical Training/ Seminar

Base Infrastructure for System AIT of Spacecraft based on turn-key solutions

- System Planning and System Design
- Civil Work Design for System AIT Buildings
- R&D of Ground Supporting Equipment (mechanical/thermal/EMC/MGSE/EGSE)
- On-site Commissioning and Final Acceptance of Ground Supporting Equipment
- Training on Operations and Maintenance

Installation/ Alignment/ Integration/
Mass property/ Vibration/ EMC/ TVC



3 EXISTING CAPACITY

3.2 Facilities oriented to system AIT

FACILITIES TO SUPPORT AIT UP TO 2 TONS

- The capacity of this AIT center is to support the development of 4-6 satellites (up to 2,000kg level) per year.
- To support the international community for Space Programs, Engineering, Seminars and Trainings.
- All the space agency, companies, universities and international organizations are welcome.
- Capable of accommodation, catering and conferences for international training and seminars



International Conference Center



System Integration & Mechanical Laboratory



Thermal Test Laboratory

3 EXISTING CAPACITY

3.2 Facilities oriented to system AIT (Continued)

MIDDLE AND LARGE SPACECRAFT SYSTEM AIT

- Designed to be applied for large spacecraft
- could be opened internationally based on approval



① 4,000 m³ acoustic test system



② KM8 thermal vacuum chamber



③ 1,200kN vibration test system

3 EXISTING CAPACITY

3.3 Environment Test for On-board Equipment

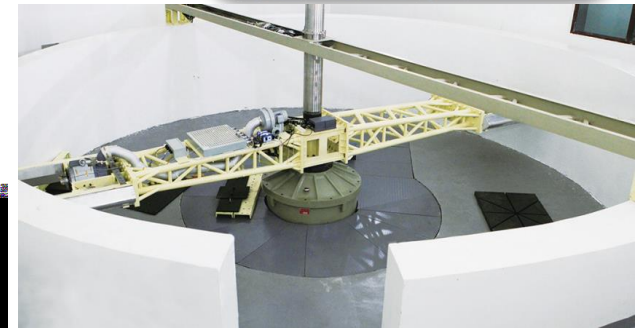
•Space Environment Test

- Thermal Vacuum Test
- Irradiation Tests (Solar, Proton, UV, Atom)
- Discharge Test (Vacuum, Static)
- Space Debris Test
- Magnetic Test



•Mechanical Test

- Vibration Test (Sine, Random, Mixed)
- Acoustic Testing
- Typical Shock (T, Half-Sine)
- Acceleration Test
- Vibration-Acceleration Test



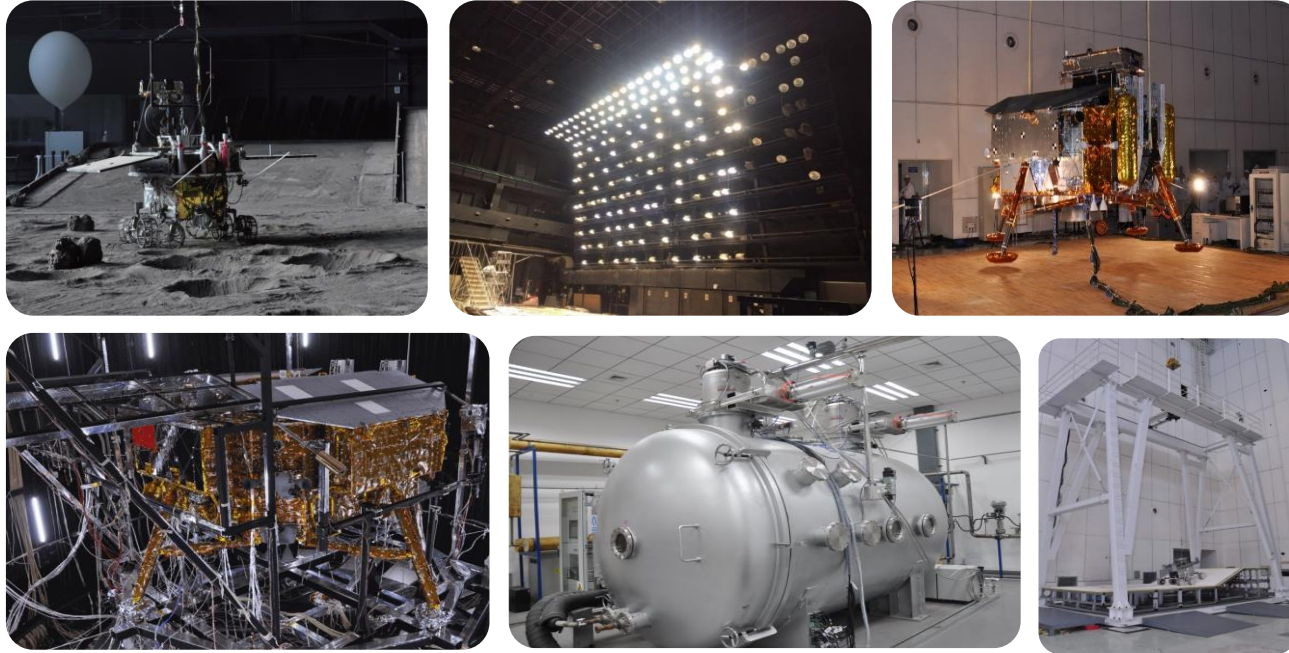
•Climate Test

- Temperature Test (High, Low)
- Damp Heat Test
- Temperature Shock Test
- Salt Fog Test
- Rain Test
- Sand and Dust Test



3 EXISTING CAPACITY

3.4 Mission Specific Test

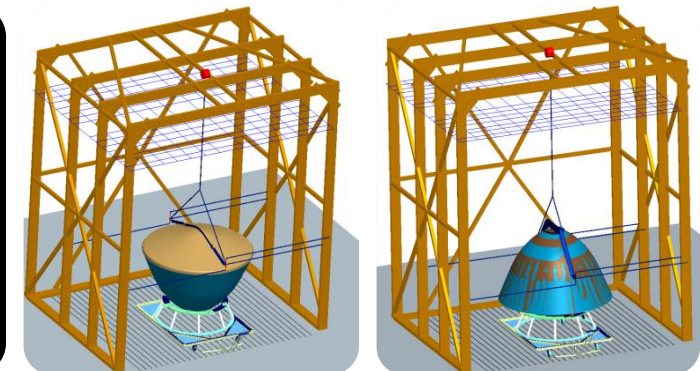
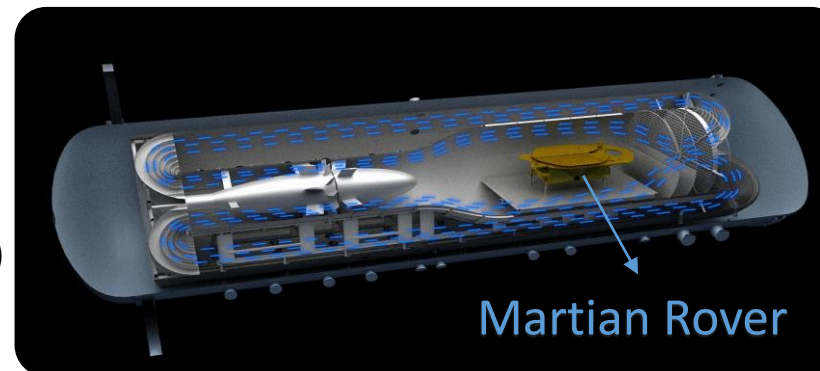


• Lunar Mission Simulation

- Lunar soil simulation area: 800m²
- Gradient: 8° , 15° , 20°
- Lunar gravity: 1/6 g
- Solar illumination simulation: 0.3 solar constant
- 3D terrain measurement accuracy: 10μm/m
- Synchronized movement accuracy: <0.8mm

• Martian Mission Simulation

- Shroud temperature range: -150~120°C
- Pressure range: 1mPa~20kPa
- Wind Velocity: 0~20m/s (CO₂ or N₂ simulant)
- Wind direction: -90° ~90°
- Accuracy: <0.5°





04

PART 4
PROCEDURE FOR ACCESS

4 PROCEDURE FOR ACCESS

All international organizations, space agencies, institutes and industries are invited to use this infrastructure as a sharing platform for supporting space programs, technical trainings and seminars.

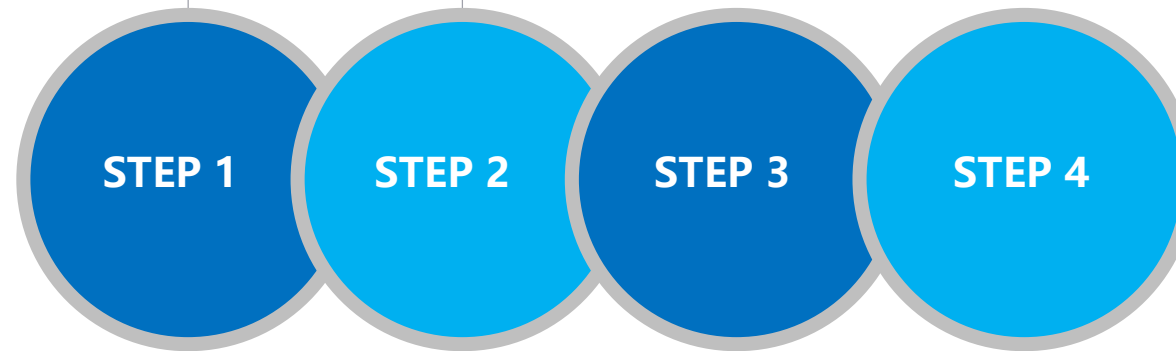
- By contacting Satellite AIT Center directly
- By accessing through CNSA

Program Registration, Classified by

- Engineering (Duration, Facility)
- Education/Training/Seminars (Duration, Facility)

Program Acceptance

- Availability of Engineering Resource
- Confirmed for education/Training/Seminars



Program Access & Implementation

- Engineering Processing
- Education/Training/Seminars performed

Program Completeness

- Technical Reports from Engineering
- Certificate Education/Training/Seminars

4 PROCEDURE FOR ACCESS

Access Information

Contact Info.

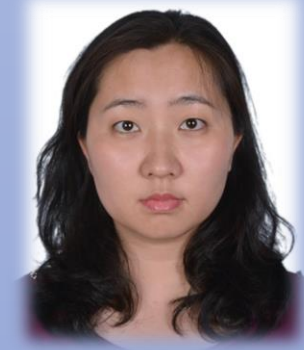
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THANKS

