

China National Satellite Major Emergency Response and Information Support Mechanism



JIANG HUI

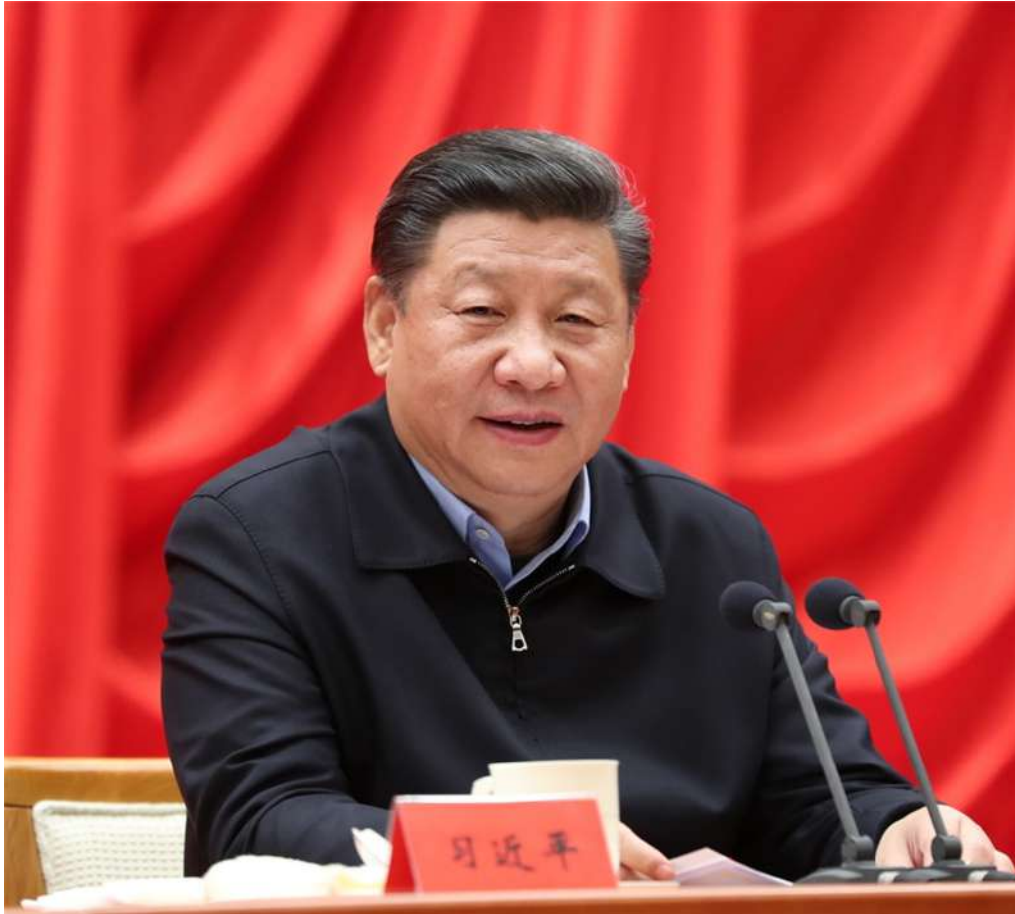
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China National Space Administration

Perface



- On December 2017 , China National Satellite Major Emergency Response and Information Support Mechanism was put into practice on a trial basis.
 - Give full play to space information support of civil satellites in major emergency responses
 - Clarify the mission scope and work modes, develop the work flow
 - Serve national emergency work in a timely and efficient manner.

Part 01

The national satellite major emergency response and information support mechanism

Principle

work mode

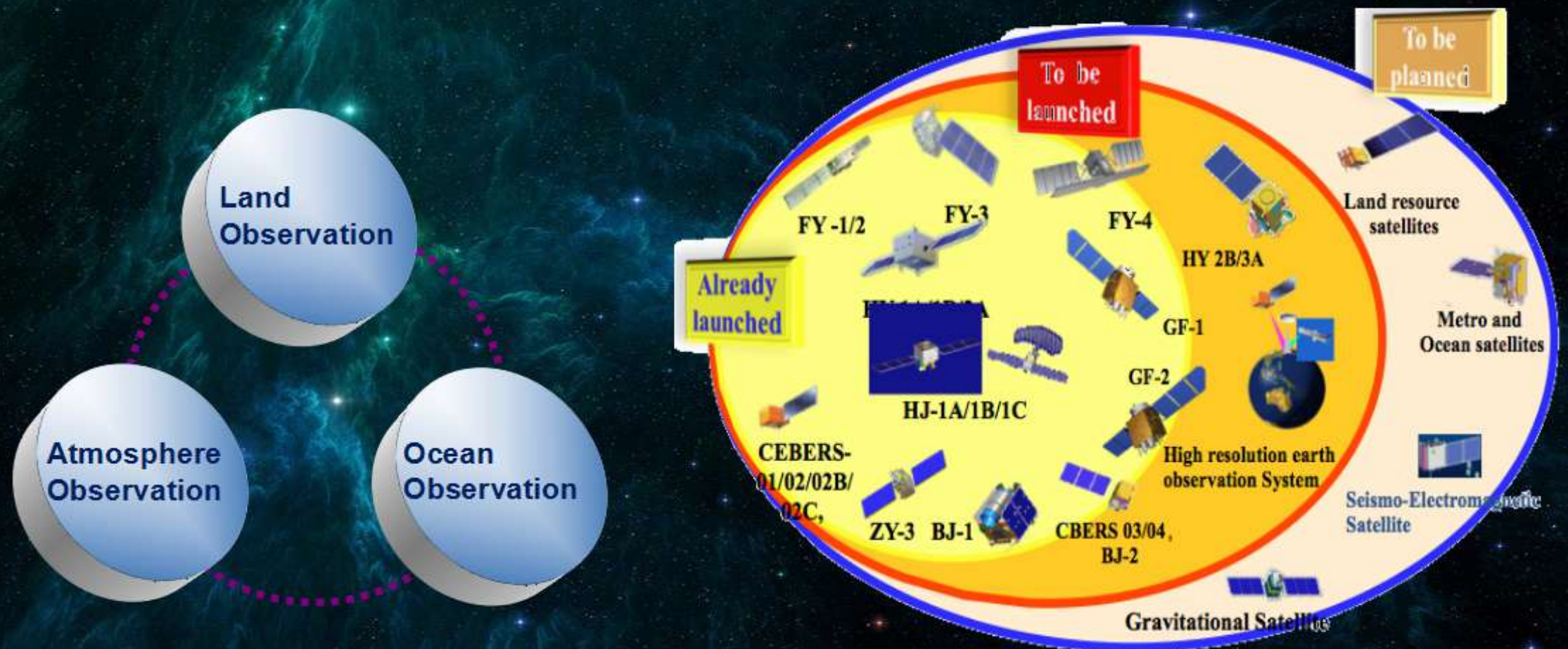
Work Flow

Service Scop



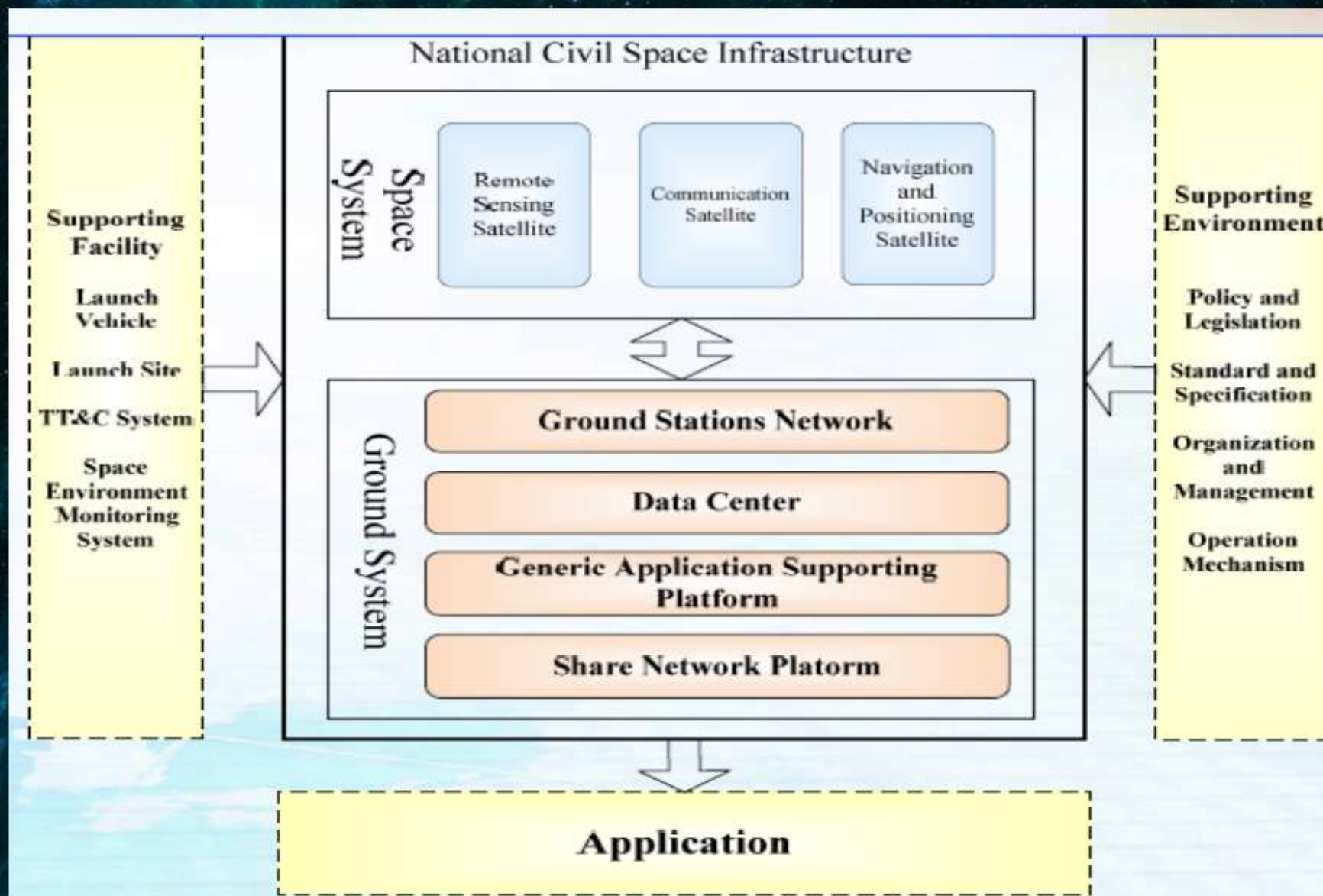
Space Earth Observation System

- Multi-level EOS application and service system
- More than 60 EOSs will be launched in the coming 10 years





Civil Space Infrastructure



Principle

Unified coordination

in-orbit civil satellite resources,

unified organization

data information study and
determine



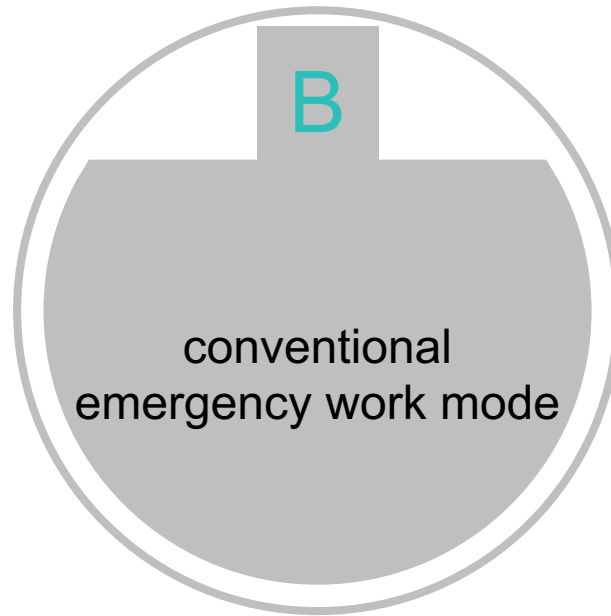
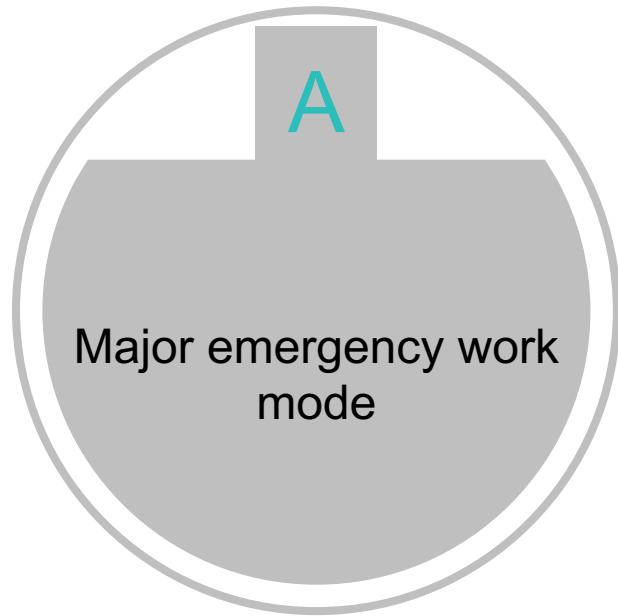
unified collection and distribution

of domestic and foreign
satellite data,

Unified reporting and notification

to higher-level authorities, to relevant
departments, and public release of
information

Work Mode



Major emergency work mode

- In response to
 - major natural disasters in China (Level 3 +)
 - major accidents,
 - major influential international events
- TASK
 - coordinating and allocating all in-orbit civil satellite resources,
 - starting the International Charter on Space and Major Disasters mechanism
 - coordinating and allocating commercial satellite resources
 - initiating data study and information support in accordance with the emergency mission needs.



Conventional emergency work mode

■ In response to

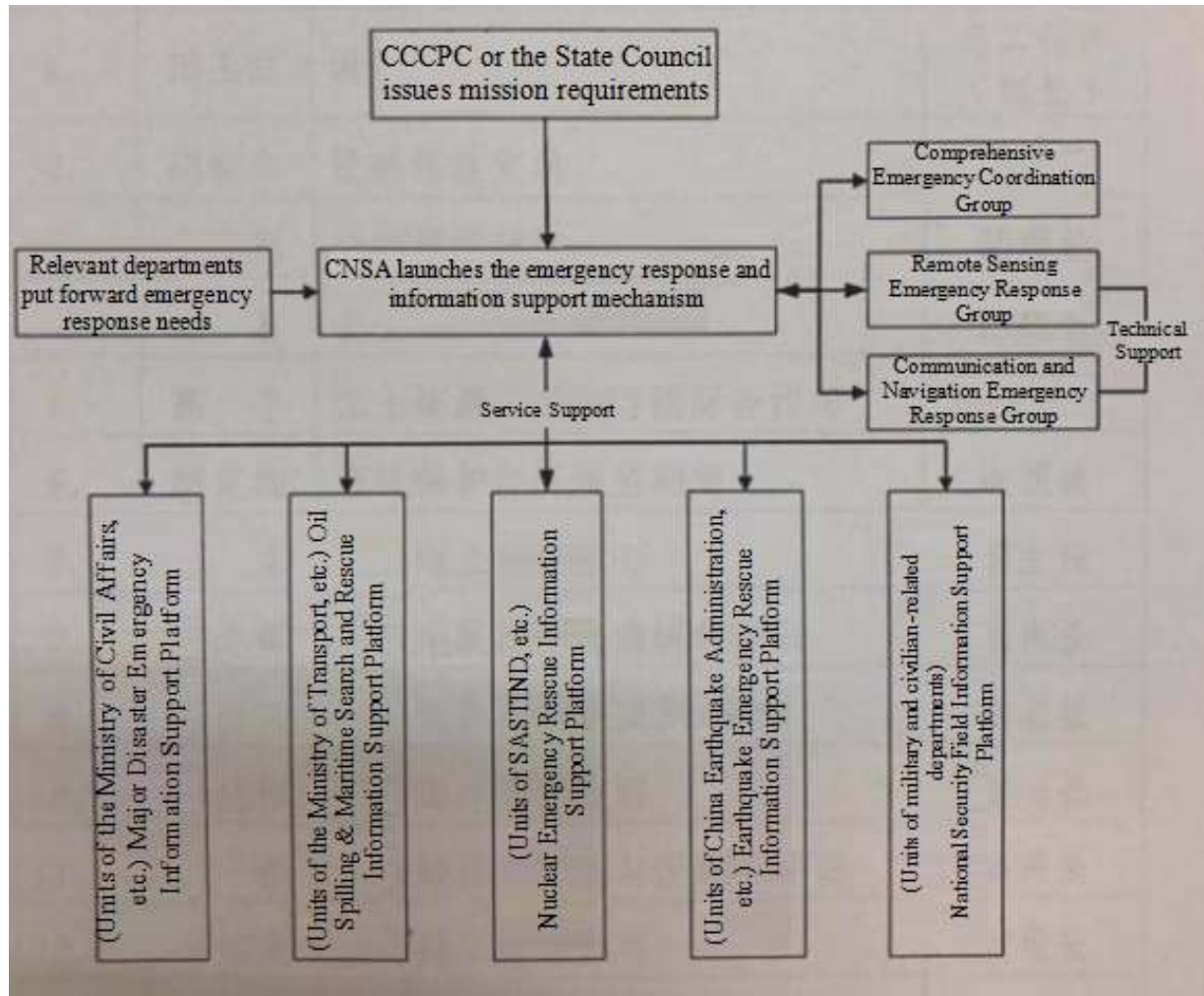
- natural disasters below Level 3,
- Regional disasters and environmental accidents
- major foreign disasters.

● TASK

- coordinating and utilizing in-orbit civil satellite resources to carry out emergency mission observations in accordance with the emergency mission requirements
- initiating data study and information support as appropriate.



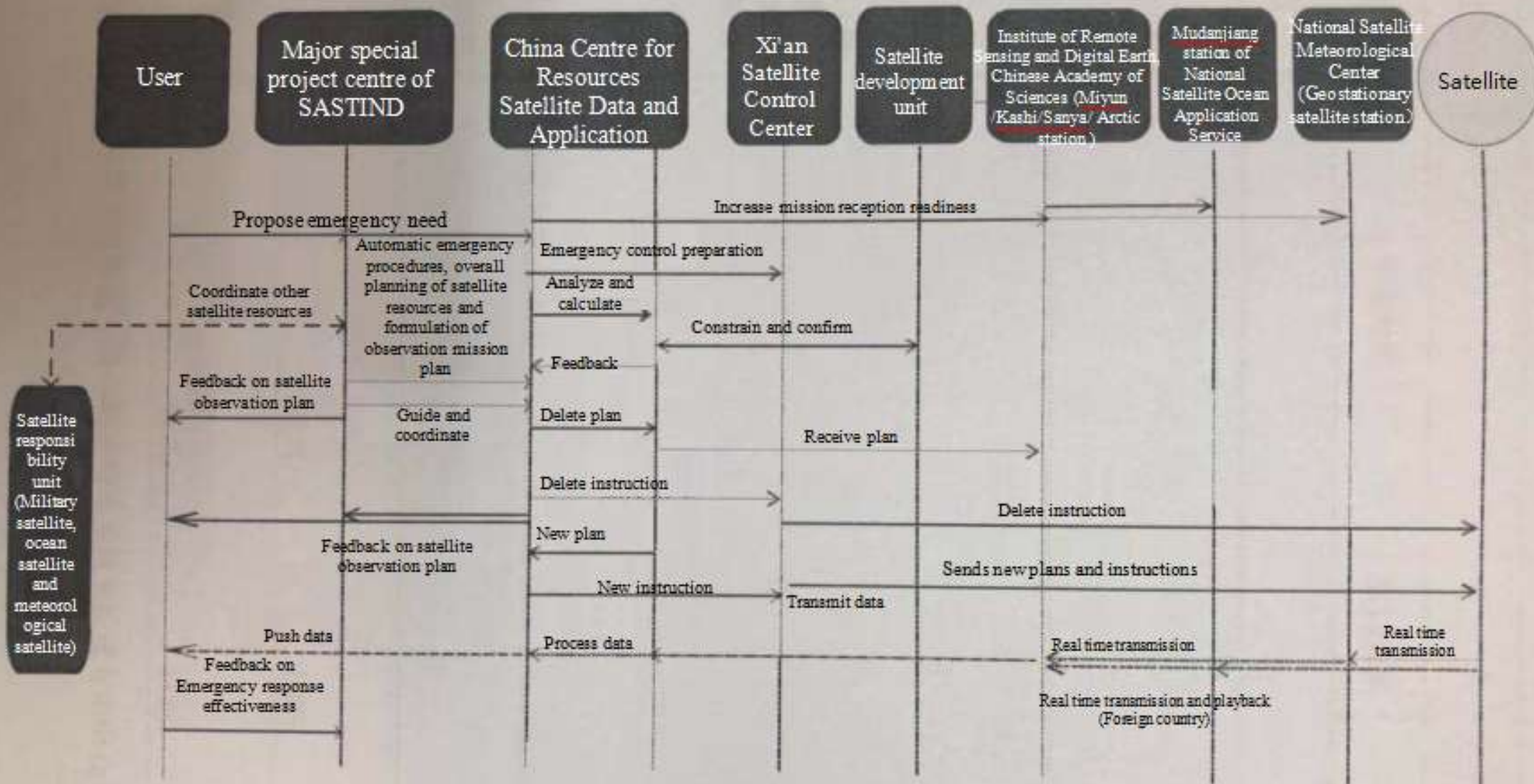
Organizational Structure of National Major Emergency Response and Information Support of Civil Satellites



Service Fields:

- major disasters
- oil spilling & maritime search and rescue
- nuclear emergency rescue and supervision
- earthquake emergency rescue
- national security, etc.,

III. Flow Chart for Acquisition of Emergency Data of National Land Remote Sensing Satellite



Part 02

Implementation

National disaster response Practice

International response

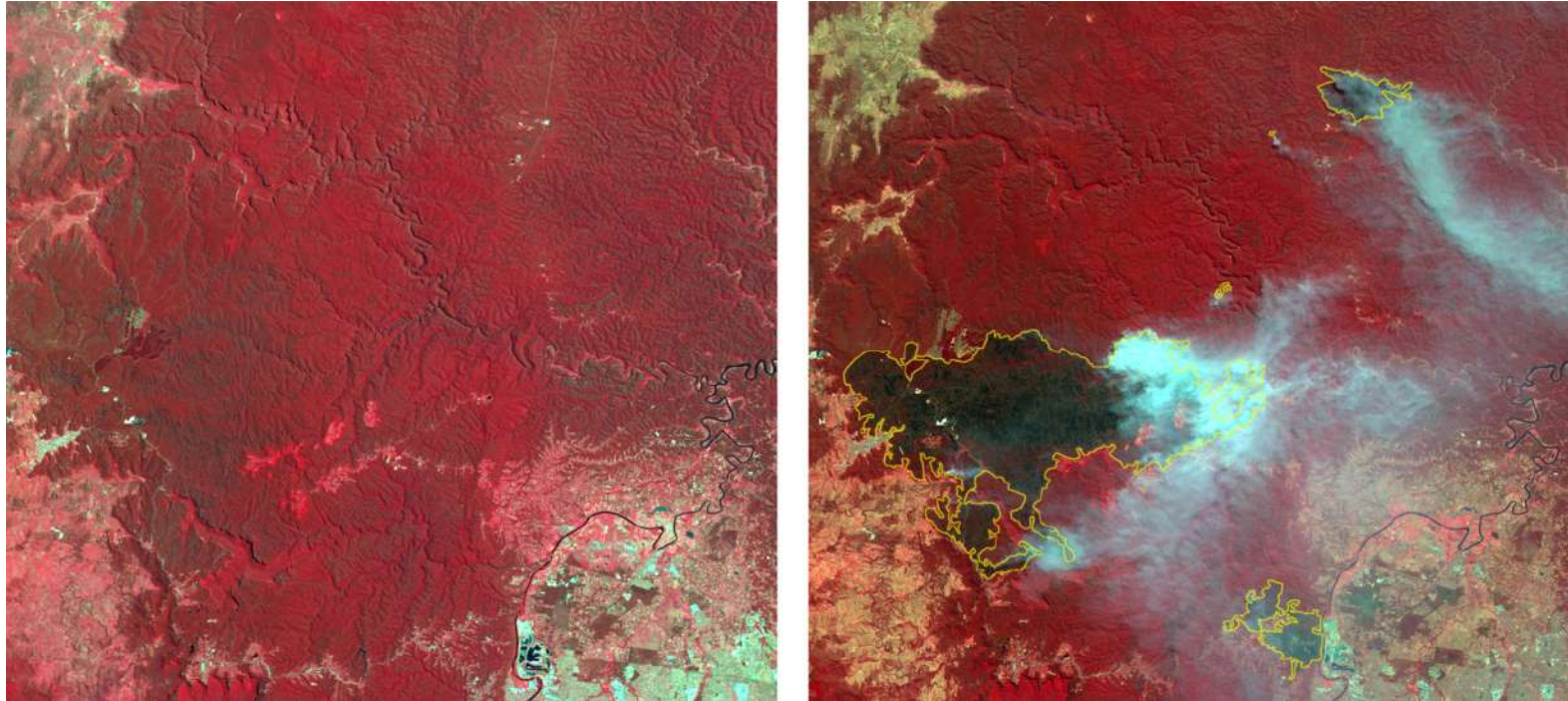


◆ Since 2011, emergency response has been initiated for more than 150 disasters or emergencies (40 of them in 2017), and 960 emergency images of land observation satellites have been invoked, providing a total of 1.66 million scenes of data.

◆ Since 2018, emergency services have been launched 29 times.

序号	应急事件名称	发生日期	安排成像次数	共享数据景数
1	南方雪灾	20180104	11	70
2	东海撞船	20180106	150	408
3	山西吕梁滑坡	20180430	1	1
4	四川南充洪涝灾害	20180430	3	3
5	肯尼亚洪涝灾害	20180512	3	3
6	四川洪涝灾害	20180523	1	2
7	河北昌黎溢油	20180523	2	6
6	吉林松原地震	20180528	4	12
7	内蒙古大兴安岭火灾	20180601	72	240
8	上合峰会保障	20180608	36	650
9	四川甘肃洪涝灾害	20180705	54	126
10	甘肃陇南滑坡	20180705	3	3
11	玛莉亚台风	20180709	5	150
12	日本暴雨	20180710	1	3
13	北京暴雨	20180716	1	3
14	台风安比	20180720	11	225
15	甘肃泥石流	20180721	7	7
16	老挝溃坝	20180725	10	63
17	台风云雀	20180727	10	18
18	新疆泥石流	20180801	2	5
19	印度尼西亚地震	20180729	3	27
20	台风珊珊	20180806	2	4
21	台风摩羯	20180810	4	8
22	云南通海地震	20180814	1	1
23	台风丽琵	20180814	2	4
24	台风贝碧嘉	20180815	1	2
25	新疆喀什5.5级地震	20180904	3	3
26	台风山竹	20180914	3	181
27	台风潭美	20180922	12	372
28	印度尼西亚7.4级地震	20180928	4	6
29	金沙江堰塞湖	20181011	22	61

Fire in Australia, 2018



The picture shows the pseudo-color image of the GF-1 satellite before the disaster and the environment-1 satellite. The forest vegetation features before the disaster are obvious and complete, and there is no burning trace. In the process of the disaster, three obvious fires and smoke can be seen. According to the estimation, the overfire area is about 70,000 hectares.

Landslide occurred in Guangming New Industrial Park, Shenzhen, 2015

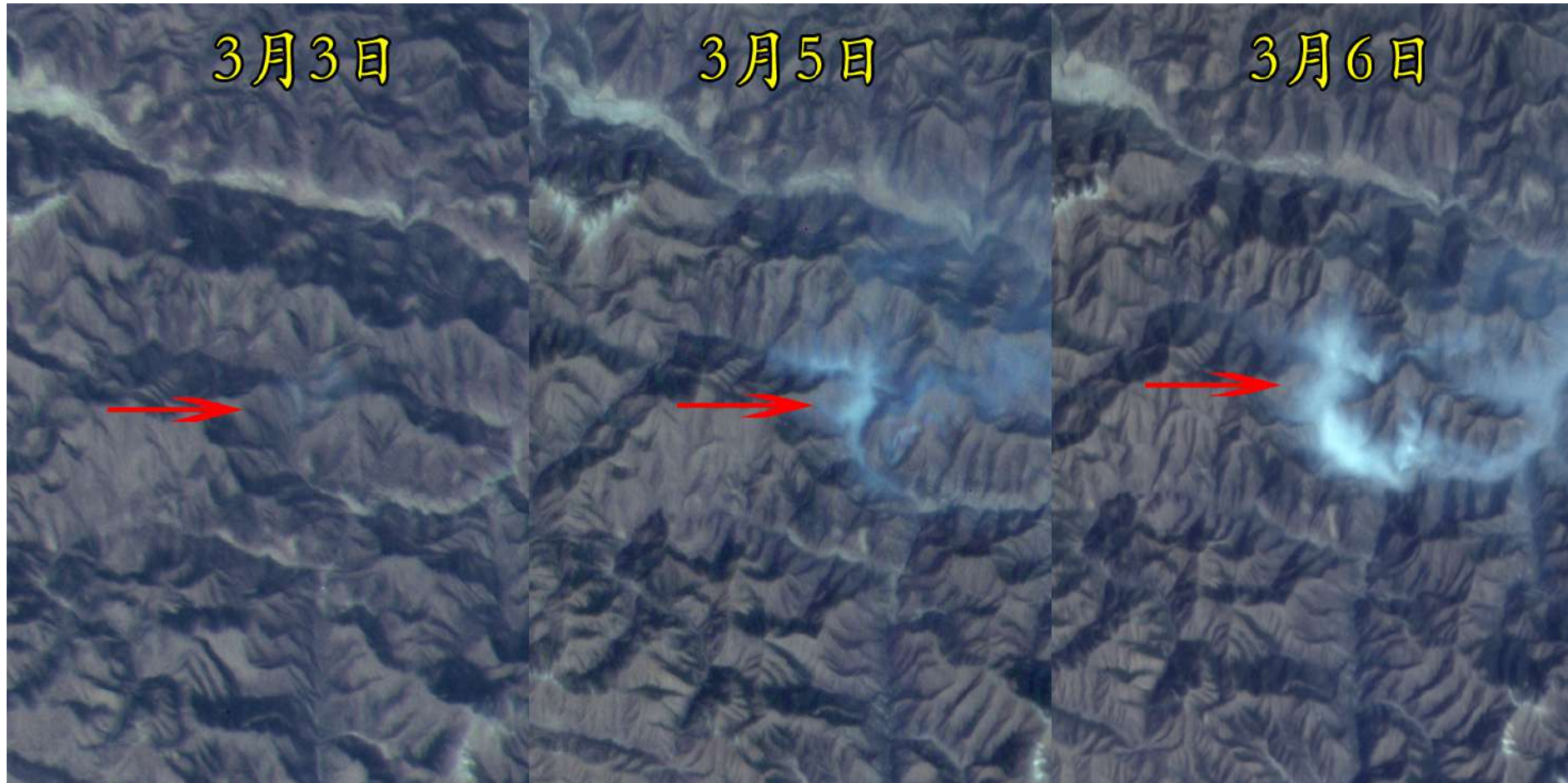


Left: Nov. 5, 2015 High Score 1 2 m/8 m Image



Right: Dec. 29, 2015 High Score 2 0.8 m/3.2 m Image

March 2016, forest fire in Gansu Province, 50 meter multispectral, monitoring daily fire progress



International Cooperation

- ◆ Multilateral
 - UNOOSA-UNSPIDER
 - ESCAP-RESAP
 - CHARTER
 - APSCO

- ◆ Bilateral
 - ◆ Brazil
 - ◆ Venezuela
 - ◆ Egypt
 - ◆

