

1st International Space Forum at Ministerial level
“Space Science and Academy for Global Challenges”

Japan’s Statement (Final Draft)

0. Opening Remarks

Thank you, Mr. Chairman. My name is Kazuo Todani, and I am the Deputy Minister of MEXT, the Ministry of Education, Culture, Sports, Science, and Technology, in Japan. I appreciate this opportunity to speak to you today.

First, I would like to offer my sincere condolences to the victims of the 2016 central Italian earthquake which occurred this August. In Japan, we experienced the devastating Tōhoku earthquake and tsunami in 2011 and we recognize the awfulness of such a natural disaster. In 2011, the Italian space Agency, ASI, gave JAXA access to the satellite data of the COSMO-Skymed satellite, which had been developed and operated by Italy. This year, JAXA provided access to the ALOS2 satellite data to assist Italy. We understand that this kind of international cooperation is a very meaningful one.

Global cooperation is essential in addressing global problems, such as climate change. In addressing natural disasters, satellites can reach across borders, and transmit large amounts of data to many users at the same time, while being unaffected by the situation on the ground. At MEXT, we are promoting space development and utilization in cooperation with JAXA and other ministries. Today I would like to share with you a bit about our main projects on “Climate Change”, “Big Data Management” and “Earth Protection” and how we work with institutions and universities in these areas. I will also talk about the relationship with academies such as researchers in university.

1. Climate Change

At COP21 held in Paris in last December, the Paris Agreement was adopted replacing the Kyoto Agreements as a

new international framework for the reduction of greenhouse gases. To accomplish the agreement goals, the precision of the earth environmental observation data will need to be improved. Japan launched the Greenhouse Gases Observing Satellite (GOSAT) in 2009. With GOSAT, we observed anthropogenic greenhouse gas and natural emissions from forest fires as well as the emissions from big cities and oil fields. By measuring the absorption in the high-latitude forest, we observed that the global average CO₂ concentrations exceeded 400ppm last year. In 2012, we launched Global Change Observation Mission – Water satellite (GCOM-W). This satellite provided us data for typhoon weather forecasting, climate change, water cycle observation, polar sea ice observations, flood warning and soil moisture monitoring. Since then, Japan has been working on acquiring more precise observation data through the development of several environmental observation satellites, such as the Global Change Observation Mission – Climate (GCOM-C) satellite and a GOSAT follow on satellite program.

The acquired data from these satellites will be utilized for research worldwide at universities and institutions, such as the National institute for Environmental Studies, the National institute of Polar Research, the Meteorological Research Institute, the Center for Environmental Remote Sensing (CEReS) of Chiba University and Global Earth Observation, or GEO activities.

2. Big Data Management

Satellites generate huge volumes of data that include significant variations in quality. This is the so-called “Big Data” issue. Under cooperation with the international community, Japan is contributing to Global Earth Observation System of Systems to construct a global earth observation system. Japan also will stably provide earth observation data, and will prepare for a mechanism to gather, accumulate, integrate, analyze, and utilize such data. For example, we have

established the “Data Integration and Analysis System” or “DIAS”, in cooperation with universities and institutions such as the University of Tokyo. “DIAS” gathers, permanently accumulates, integrates and analyzes the satellites’ observation data. It also aims to contribute to a comprehensive national security approach and the safety of Japanese people, by integrating data with social-economic information, converting it to data which is beneficial for risk management against global environmental problems and significant natural disasters, and by providing such data to the international community.

3. Earth Protection

We hope that Space-based Systems will be utilized for the prevention and damage mitigation of such a large-scale natural disasters. Through an international project called “Sentinel Asia” which aims at monitoring natural disaster in Asia-Pacific region, Japan shares disaster information obtained by

space-based technologies such as earth observation satellites, and works on damage mitigation and prevention of natural disasters such as typhoons, floods, earthquakes, mudslides, volcanos, and wildfires. At the time large-scale flooding occurred in Sri Lanka last May, information from the flood zone, acquired by ALOS-2 was provided by Sentinel Asia and used in the planning of local relief efforts. With respect to prediction and forecasting, we utilize GSMaP, or Global Satellite Mapping of Precipitation, to forecast and warn of potential flooding in developing countries such as Thailand, Pakistan and Bangladesh. GSMaP was developed by JAXA in cooperation with several Japanese universities using global satellites data.

4. Summary

Japan has been working on resolving global problems under international cooperation, by using space-based systems. I also

understand it is important to proceed development of human resources for space systems, in cooperation with academia and universities. Under cooperation between United Nations and JAXA, the program to deploy cube-sats from Japanese module of the international space station, called “Kibo”, is proceeding. This program is called “KiboCUBE” and the first satellite in this program is currently being developed by university of Nairobi, Kenya.

Finally, I would like make one announcement before I finish. Next year, in the latter half of 2017, Japan will host the 2nd International Space Exploration Forum, ISEF2. The first ISEF was hosted by US in 2014 as ministerial level forum for space exploration, succeeding the international high-level conference on space exploration, which was started under an initiative by European nations. Attending this 1st International Space Forum at Ministerial level today, shows the importance of international cooperation in the area of space. Since the ISEF2

is also a ministerial level international forum, to show a commitment to the importance of international cooperation, I would hope that we will see delegations from every country attend ISEF2. Japan will continue to actively contribute to international cooperation in space development and utilization, thru the efforts I mentioned today, and into ISEF2.

Thank you very much for your attention.