Bhutan

Hon'ble Secretary's

Address at the High-level Segment UNISPACE50+

Date: 18-21 June, 2018

Venue: Vienna, Austria

[Greetings...]

- Historically, Bhutan's entry into the space era began with the allocation of the following two geostationary orbital positions by the International Telecommunication Union (ITU) to Bhutan:
    1. 59.1° E longitude related to Fixed Satellite Services which was allotted in 1988.
    2. 86° E longitude Appendix 30 & 30A for Broadcasting Satellite Services, which was allotted in 2000.
- These satellite orbital slots are valuable as such slots are very limited.
- It is clear that satellite technologies and applications have a huge potential for accelerating the socio-economic development of a nation by supporting communications to both urban and remote parts of the country and as a redundant infrastructure in case of disasters.
- Satellites can also be used for earth observation, which can be applied in planning, monitoring and research in almost every sector.
- Satellites applications would be especially useful for a developing country like Bhutan, which is landlocked and mountainous.
- Effective use of satellite technology would also facilitate in achieving national objectives and the UN Sustainable Development Goals

(SDGs). Satellite technology is evolving rapidly and is moving towards providing higher functionality at lower costs.

- It is, therefore, important for Bhutan to harness the opportunities that satellite technology have to offer in improving the quality of life of its people.
- With these considerations it has now became clear that Bhutan will need to develop capacity and expertise in satellite technology if it is to protect the valuable limited orbital slots that have been allocated by ITU for future use.
- Towards this, at the 18th SAARC Summit in 2014, the Indian Prime Minister announced that India would launch a South Asia Satellite for use by the SAARC member countries.
- This was followed by a conference in 2015 in Delhi to initiate discussions on the SAARC satellite.
- The indications were that India could provide each SAARC country with one transponder.
- Each country would have to consider setting-up their own independent ground infrastructure to use the satellite resources to address the application area of interest.
- To benefit fully from India's generosity, Bhutan is in the process of building basic infrastructure on the ground and the capability to manage it well to fully benefit from India's generous offer of the South Asia Satellite to meet its various development needs.
- It is with these objectives that Bhutan is now seeking to slowly develop skills and expertise in satellite technology.

- In order to build technical capacity in the country Bhutan joined the Multi-National CubeSat Constellation Project called BIRDS-2 in Japan, which is a cross-border inter-disciplinary satellite project for non-space faring countries in November, 2016 with the profound vision and guidance of His Majesty the King.
- As part of the project students would undergo a Masters Degree in Space Engineering at the Kyushu Institute of Technology in Japan.
- During the 2 years project, the students from participating countries will work together to design, develop and operate a CubeSat (1kg, 10cm cubic) for space research, for each of the five participating countries.
- The three CubeSats of BIRDS-2 project was transported to JAXA on May 14, 2018 by BIRDS-2 project members.
- The CubeSats was integrated with the JAXA's CubeSat deployer POD (JSSOD) on May 15, 2018.
- The satellites were shipped to USA on May 16, 2018.
- The satellites are expected to be launched with the cargo spacecraft to ISS on a SpaceX rocket, which is at the moment scheduled on June 28, 2018.
- The Cubesats will be deployed from ISS end of July or early August, 2018
- The satellite when launched will leverage Bhutan from a previously **non space-faring nation** to an **emerging space nation**
- Such CubeSats are much cheaper and easier to launch, and through this students will get introduced to the frontiers of space and satellite technologies as innovative engineers and dynamic leaders.
- As these are much smaller, the CubeSats developed will have very limited use and will primarily address specific research studies.

- However, as Nanosats are a new development in satellite technology it holds enormous potential even for communication with a constellation of small sats.
- Such a project would provide Bhutan a good opportunity to not only build, but also launch and operate Bhutan's first spaceborne satellite, thus paving the way for Bhutan to move forward in the field of space and satellite technology.
- From an organizational perspective, the Department of IT & Telecom (DITT) under the Ministry of Information and Communication is restructured as "Division of Telecom & Space," to take forward the space and satellite activities in Bhutan.
- To prepare the DITT for the space program there is a need to rapidly build up capacity through both long term and short-term trainings, and to build networks to make participate effectively in international forums.

Thank you and Tashi Delek!