

Promoting Space Sustainability

**Nigerian Communications
Satellite Limited**

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Implementation of the Guidelines for the Long-term Sustainability (LTS) of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space

Operational Case Studies

I. Short description of the outer space activity

Since the launch of NigComSat-1R in December 2011, Nigerian Communications Satellite (NIGCOMSAT) has coordinated with over 30 administrations 95% of the coordination were successfully done through exchanges of information and provision of appropriate information related to the orbital resource of the spacecraft. It is essential to note that after the de-orbiting of NigComSat-1 in 2008, a lot of orbital coordination were carried out in order to achieve accurate trajectory for the de-orbiting of NigComSat-1 to prevent spacecraft collision in space and also to increase traceability of the spacecraft. Likewise, the risks associated with uncontrolled space object in line with guideline B.9 were also averted.

In promoting space sustainability, NIGCOMSAT has funded series of scientific and technical research developmental programmes to support capacity building and awareness as related to space challenges or expeditions, most recently is the ActinSpace competition of the European Space Agency, some Nigerian young researchers and space enthusiasts were sponsored by NIGCOMSAT to take part in this global space challenge.

NIGCOMSAT is also in collaboration with Agency for Aerial Safety and Navigation in Africa (ASECNA) and Thales Alenia to accelerate Satellite Based Augmentation System development for aviation in Africa with a successful test flight demonstration in Togo last month, January 2021.

To further strengthen the activities of NIGCOMSAT and peaceful use of outer space, the organization has been working closely with the national regulatory body to enhance the supervision of national space activities and promote adequate utilization of satellite frequency spectrum within the allocated bands. To promote and adhere to the regulations, the organization holds quarterly meetings with the national regulatory body to discuss policies that ensure good service delivery. In recent times, discussion on extended C-band spectrum utilization for 5G is ongoing with the National regulatory body this is to promote and facilitate international cooperation.

In improving accuracy of orbital data, NIGCOMSAT has performed series of in-orbit operations to maintain the spacecraft in space.

II. Connection with the LTS Guidelines

All the bilateral coordination with over 30 administrations are in line with the ITU regulations and in conformity with guidelines A.4, B.1 and B.2 of the long-term sustainability guidelines. The Company's activities in the area of accurate trajectory and deorbiting of NigComSat-1 to prevent in orbit space collision with another spacecraft is in accordance with the guideline B.8 of the Long-term sustainability guidelines. Also the aversion of risks associated with uncontrolled space object is in line with guideline B.9.

Funding of scientific programmes and technical research focused on capacity development is in line with the guideline D.1 and the guideline C.3 to promote

and support capacity building and awareness as related to space challenges or expeditions.

In the area of peaceful uses of outer space, international best practices that conform with the long-term sustainability guidelines stipulated in guidelines A.1 to A.3 as well as guideline C.1 are strictly followed. In the area of orbital data, guideline B.2 to B.8 and guideline C.3 of the LTS are being adhered to.

III. Lessons learned

Successful coordination through exchanges of information and provision of appropriate information with other administrations has increased the image and business outreach of NIGCOMSAT.

Through scientific and technical research programmes, a lot of youths were equipped with space-based skills. Opportunities for exchange programmes in the space industry are identified and encouraged for in-house capacity development.

National inter-governmental collaborations were established through working closely with the national regulatory body in facilitating national space activities.

Lastly, over 300 East-West station keepings have been performed as well as other orbit measurement operations in order to build related experience in space activities and create a procedural process to improve expertise and knowledge on flight dynamics and provide access to appropriate precise orbital data.