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Long-term sustainability of outer
space activities**

**Updated report on the voluntary implementation of the
Guidelines for the Long-term Sustainability of Outer Space
Activities in Norway**

The present conference room paper was prepared by the Secretariat on the basis of information received from Norway. The information was reproduced in the form it was received. A shorter related text is available in all the official languages of the United Nations in document A/AC.105/C.1/L.409/Add.3.

* AC.105/C.1/L.405



Updated report on the voluntary implementation of the Guidelines for the Long-term Sustainability in Norway

Introduction:

Long-term sustainability of outer space is of high priority to Norway, and we welcome the adoption of the 21 Guidelines for the long-term sustainability of outer space. We also commend the establishment of the new working group on Long Term Sustainability, and look forward to contribute to it. Norway is presently in the process of considering how to best implement the guidelines on a national level.

The Norwegian Space Law from 1969 is currently being revised, and will soon be replaced by a new space law. The new law will, among other, provide a framework for space activities, such as the registering of space objects, supervision of space activities, sanctions and liability.

Awaiting the entering into force of Norway's new Space Law and affiliated regulations, this preliminary report constitutes the status of implementation of certain guidelines. A more extensive report will follow.

The focus of the report is mainly on national measures.

A. Policy and regulatory framework for space activities

Guideline A.1: Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities

The Norwegian Space Law from 1969 is currently being revised, and will soon be replaced by a new space law. The new law will, among other, provide a framework for space activities, such as registering of space objects, supervision of space activities, sanctions and liability.

Guideline A.2: Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer space activities

Norway is currently in the process of revising the national regulatory framework for Outer Space Activities. The draft process considers the elements recommended in A.2. Norway looks forward to report on this once the new law is adopted.

Guideline A.3: Supervise national space activities

The Ministry of Industry, Trade and Fishery is the authority overseeing the space activity conducted with a licence granted in line with the law of 1969. The government has decided to set up a new national authority at the Civil Aviation Authority to oversee space activities from 2023.

Guideline A.4: Ensure the equitable, rational and efficient use of the radio frequency spectrum and the various orbital regions used by satellites

Norway is a member state of the International Telecommunication Union (ITU).

The Norwegian Communication Authority (NKOM) is the responsible authority overseeing spectrum use in Norway in accordance with the EKOM law.

Guideline A.5: Enhance the practice of registering space objects

Norway is party to the Convention on Registration of Objects Launched into Outer Space of 1974. The Ministry of Foreign Affairs is responsible for the National registrations in accordance with Norway's international obligations. Currently the Norwegian Space Agency (NOSA) maintains the national registry for space objects. The registry is, however, planned to be transferred to the Civil Aviation Authority from early 2023. The Ministry of Foreign Affairs reports relevant information to UNOOSA. As a consequence of the development in the Norwegian space sector, including launches from the Andøya Spaceport, registration practices will be developed in line with guideline A5

B. Safety of space operations

Guideline B.1: Provide updated contact information and share information on space objects and orbital events

Norway is currently evaluating the need for SSA, and which governmental body should be responsible for this. Norway is participating in the EU and ESA space programmes relevant for SSA.

Norway has an SSA data sharing agreement with the United States, and is working with national actors to utilize this sharing agreement to a greater extent.

Norway is also participating in the work of relevant standardization organizations.

Guideline B.2: Improve accuracy of orbital data on space objects and enhance the practice and utility of sharing orbital information on space objects

Sensors located in Norway has contributed to statistical space debris measurements. The Norwegian Mapping Authority has plans to install a Satellite Laser Ranging (SLR) as part of their Geodetic Observatory. Additionally, Norway contributes to the US SSN network. Norway also has initiated activities on doing orbital estimation of national satellites.

Guideline B.4: Perform conjunction assessment during all orbital phases of controlled flight

NOSA is working with the operator of the nationally owned satellites (Statsat) to improve procedures for collision avoidance. Norway has an SSA data sharing agreement with the United States and is receiving collision warnings through SpaceTrack. Norway is working with national actors to utilize this sharing agreement to a greater extent and to incorporate the use of collision warnings from EU-SST.

Guideline B.6: Share operational space weather data and forecasts

Norway monitors and shares relevant observations useful for monitoring space weather to e.g. ESA and the World Data Center for non-commercial use. Space weather services are freely available from the national actors working on the topic, including the Norwegian Center for Space Weather (<https://site.uit.no/spaceweather/>) which is a member of the International Space Environment Service (ISES) and the Norwegian Mapping Authority (<https://sesolstorm.kartverket.no>). Sharing of space weather forecast is more limited since we presently do not have a 24/7 national space weather service. National actors are, however, meeting regularly to plan for such a service.

The Norwegian Mapping Authority performs independent monitoring of the performance of the ionospheric models of EGNOS and Galileo for the EU Agency for the Space Programme (EUSPA), as part of consortiums led by CNES in France.

Guideline B.7:

Norway has experts contributing to space weather activities in WMO and the Norwegian Center for Space Weather is the Norwegian member of ISES.

The Norwegian company EIDEL is developing a Floating Potential Probe to measure the platform potential on satellites through a project funded by NOSA. This enables compensation of biased measurements on the satellite and detection of physical damage to electronics due to space weather effects.

Guideline B.8:

The Norwegian technology demonstrator satellite Norsat-TD, planned to be launched during spring 2023, will be equipped with both a laser reflector and a GNSS precise positioning payload to build national experience with utilizing this for orbit determination and maneuvering during operation.

NOSA has implemented requirements that includes a maximum 5 year time period before deorbiting after end of operation on LEO satellite-programs funded through NOSA.

C. International cooperation, capacity-building and awareness

Guideline C.1: Promote and facilitate international cooperation in support of the longterm sustainability of outer space activities

Norway participates in international cooperation on sustainable use of outer space in UNCOPUOS, and in international organisations such as ESA, EU, EUMETSAT and ECSS STM working groups for standardization. In addition, Norway has bilateral agreements with several nations.

Guideline C.3: Promote and support capacity-building

NOSA has been cooperating with the Scandinavian Institute of Maritime Law at the University of Oslo in arranging space law seminars. NOSA has also supported the European Centre for Space Law (ECSL) in hosting a space law symposium in Oslo.

Guideline C.4: Raise awareness of space activities

NOSA is involved in various matters regarding raising awareness of space activities, and has, among others, hosted a seminar together with the Norwegian Center for Climate Research on climate and satellites. Furthermore, NOSA is, in cooperation with the University of Oslo and the Norwegian University of Science and Technology, hosting arrangements on studies in the space sector in Norway and internationally. Norway will host the IAF Global Space Conference on Climate Change in 2023.