European Interparliamentary Space Conference (EISC) 2021 Workshop

Sunday 7 November – Tuesday 9 November

Summary

On November 7th-9th, 2021, the Norwegian Presidency of the European Interparliamentary Space Conference (EISC) hosted the 2021 EISC Workshop in the city of Tromsø. Members of the EISC delegations of Austria, Belgium, Estonia, Germany, Luxembourg, Norway and Poland as well as representatives from the European Space Agency (ESA) and the European Space Policy Institute (ESPI) attended the event.

The Workshop started with a welcoming reception hosted by Ms. Lene Westgaard-Halle and Mr. Masud Gharahkhani, heads of the Norwegian EISC delegation currently holding the Presidency of the Conference, at the Polaria Aquarium.

Monday 8 November

In the morning, delegates went to the venue of the Fram Centre, a consortium gathering multiple institutions, to attend presentations.

Afterwelcoming speeches from the EISC Presidency and Gunnar Wilhelmsen, the Mayor of Tromsø, **Bo Andersen, leader of the Steering Committee of the Fram Centre**, took the floor to present the Centre. This institution gathers 21 research organisations, therefore the importance of collaboration to produce high-quality and interdisciplinary science was highlighted. Similarly, Mr. Andersen stressed the relevance of space for the Arctic region: firstly, satellites are essential to run a modern society in higher latitudes (e.g. to provide communications); secondly, satellite systems are key to understand climate and environmental changes, which affect the Arctic to a greater extent than other parts of the globe. As a consequence, many institutes hosted by the Fram Centre make use of space solutions for their research.

The importance of space for research, in particular related to climate change, was also mentioned by **Ole Arve Misund, Director of the Norwegian Polar Institute (NPI**). The NPI is the biggest organisation on polar research in Norway, with facilities in Tromsø, other parts of the country, and in Antarctica. Overall, Norway spends around €200 million per year on polar research. The main objective of the NPI is to be physically present in polar areas to conduct research. For this purpose, the Institute owns specific infrastructure (e.g. an ice-class research vessel and research stations). The NPI hosts research teams from other countries in its facilities. Through specific examples, Mr. Misund demonstrated to the delegates how satellites concretely contribute to the understanding of the Arctic and Antarctica and of their evolution due to climate change (e.g. through the study of ice cover change and the movement of ice masses).

The next speaker, **Mathieu Parker, Director of the Arctic Council Secretariat**, provided a presentation of this international forum, which aims at favouring coordination, cooperation and interaction

between the Arctic countries and populations. The Council is made of eight member states and representatives of Indigenous Peoples. Six working groups are in charge of developing and implementing projects. Observers also contribute with their expertise in the working groups. The Arctic Council is a consensus-based organisation focusing on shared issues and leaving aside security and defence topics. Due to this inclusiveness, the forum is successful, and its working groups are currently conducting more than 100 projects in several areas (emergency management, pollution, shipping monitoring…). Given the characteristics of the region, many of these projects make use of space-based assets. Finally, the Council approved in May 2021 its first Strategic Plan, which includes seven strategic goals.

Afterwards, **Nina Buvang Vaaja, Director of BarentsWatch**, presented her organisation. BarentsWatch is an initiative of the Norwegian government created ten years ago with the aim of collecting, developing and sharing information about the Norwegian ocean and ocean areas. Therefore, it provides a platform to all Norwegian authorities in charge of maritime issues to share their data, as the initiative does not produce or own itself these data. BarentsWatch provides two types of services: public services to governmental organisations, businesses, and individuals; and non-public services, which are exclusively provided, based on their needs, to Norwegian institutions conducting operations. Examples of services include FiskInfo, which provides Norwegian fishers with a real-time image of the maritime traffic and of the spots where fishing nets are placed; or information on areas at risk when rocket launches occur in Northern Norway. For the non-public part, BarentsWatch provides an ocean monitoring service for search and rescue missions, coast guards missions or fishing control; as well as a joint register of search and rescue resources, allowing easier coordination between Norwegian authorities in case of emergency.

Finally, **Magnar Gullikstad Johnsen, from the Tromsø Geophysical Observatory** (TGO), closed the session. After explaining the history of the Observatory, Mr. Johnsen detailed its work on auroras and space weather. The main mission of the TGO is to maintain observations to create time series on changes in the Earth's magnetic field. The TGO also studies the impact of solar activity on Earth (the so-called space weather), which can disrupt the operation of satellites and other modern technologies and can therefore have major consequences on daily life. To help mitigate these consequences, the TGO provides forecast services to several categories of users (e.g. meteorological services, power grid and drilling companies, military actors…). It was also noted that the greater push towards the exploitation of the Arctic (a region particularly sensitive to solar activity) leads to growing deployment of technology in this area, thus increasing dramatically the need to seriously take space weather into account. However, Mr. Johnsen emphasised that awareness about the stakes of space weather is still limited at the level of (Norwegian) policy-makers, even though both the EU and ESA are working on this topic.

All presentations were followed by a Q&A session with EISC delegates, in which several issues were addressed, such as the importance but also the challenges of international cooperation; the use of space data in combination with non-space data; or the possibility to measure the positive impact of the use of satellites.

In the afternoon, participants were received by **Nina Soleng, Head of Communications, and Jan Petter Pedersen, VP of Strategy and International Relations, at Kongsberg Satellite Services (KSAT)**, a major player in the ground segment and Earth observation markets, with headquarters established in Tromsø.

The infrastructure and activities of the company were presented to delegates, with particular emphasis on a few services, such as oil spill detection, illegal fisheries monitoring, or deforestation assessment. All these services rely strongly on space-based data, which can also be complemented

with other sources of data. The company, which does not own any satellite yet, is nonetheless part of a Norwegian project, MicroSAR, which will enable it to directly get images without having to buy them from its competitors.

The challenges that the company will face due to the growing traffic were also addressed. Due to the development of the space sector, more and more satellites are launched, and the demand for the ground station services of KSAT is expected to grow. However, supporting all these additional spacecraft before and during their launch, and during their operations, will be complex. To overcome potential difficulties, the company plans to increase automatisation, develop its IT infrastructure, and explore the use of telescopes.

At the end of the first day, delegates were invited by the Norwegian Presidency to a dinner at the Fjellstua Café.

Tuesday 9 November

During the last session of the Workshop, EISC delegates visited the **European Incoherent Scatter Scientific Association (EISCAT)** facilities. There, participants were sensitised by Tom Grydeland, from NORCE Northern Research Institute, on the issue of space debris. Delegates were informed that space debris constitute a major threat, as it can put at risk space systems on which our modern life is reliant. To face this issue, monitoring, prevention and mitigation are key dimensions. EISCAT has in the past contributed to the monitoring part. Indeed, the organisation, created for scientific research on the ionosphere, is currently building a new generation infrastructure for its mission (EISCAT_3D). An effort led by NORCE is underway to plan for one of the radars that will be decommissioned to instead be bought, completely refurbished and repurposed for space debris observations. If completed, this will result in one of the world's most sensitive radars dedicated to this activity, and in a very favourable location.

After the presentation, EISC members enjoyed a tour of the facility, which hosts the VHF radars that in the future may be used to track space debris.