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# **Connectivity in the Arctic**

## **Discussion paper**

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## **Background**

The Task Force on Improved Connectivity (TFICA) started its work in Helsinki in November 2017, where the Task Force held its first meeting. Since then the Task Force has had two other meetings. The second meeting was in Washington DC in May 2018 and the third meeting was in Copenhagen at the end of September 2018.

The Task Force was advised to work with the industry and the Arctic Economic Council to encourage the creation of improved connectivity in the Arctic in the Mandate of the Arctic Council 2017 Ministerial meeting. This mandate has been one of the guiding principles in the work to improve connectivity in the Arctic.

Since the first meeting, the focus of this group has been on understanding user needs, exploration of new technological solutions, commercial opportunities and sharing of best practices. It has shared a clear vision where the aim is to engage with the telecommunications industry to deepen the analyses of the different user needs versus the available technologies and services. Therefore, a number of companies and organizations representing a wide variety of innovative technological solutions were invited to participate in the second meeting of the TFICA in Washington DC, together with delegates from the Arctic States, Permanent Participants, Working Groups and Observers. The aim of the meeting was to get a better understanding of the technology that exists today, discuss user needs and explore ways to accelerate network deployment in the Arctic. Twelve invited business and industry representatives, which have certain expertise in connectivity and telecommunications in the Arctic and which represent a wide variety of innovative technological solutions, were present in the meeting.

The main conclusions from the discussion were that there are in fact a number of ongoing projects which aim to provide full satellite coverage of the Arctic, in addition to undersea cables passing through the Arctic. Each of these technologies has the potential to dramatically increase connectivity, speed and improve coverage throughout the Arctic. For example, there are ongoing experiments with cross-linked Low-Earth Orbit (LEO) satellites, smaller nanosatellites with cross-link communications and field studies with deployable broadband. In Norway and Russia, there are ongoing projects deploying highly elliptical orbit (HEO) satellites with steerable beams, which may cover most, if not all of the Arctic. Of particular importance to Search and Rescue, Iridium has received recognition from IMO for the Global Maritime Distress Safety System, GMDSS, which will allow people in distress not only to communicate their position, but also to describe the type of distress through text or voice technology.

When discussing user needs, the industry representatives suggested that within the Arctic where there are a variety of unique end users, there is a need to gain a better understanding of the demands and different requirements in order for industry to identify potential solutions to those connectivity

challenges. The biggest user groups are governments (health, education, military, justice, SAR etc.). However, new technology and better connectivity opens up opportunities for new practices in rural areas, such as within reindeer husbandry.

It was also mentioned that attracting the necessary funding for investment in telecommunications for the Arctic is challenging. Pricing, availability, reliability and accessibility remain some of the biggest challenges. On the third topic, concerning barriers and network deployment, the need for Public Private Partnerships was highlighted. Match funding or finding areas of mutual interest and identifying the right models were labeled as a key issue. In terms of regulations, the industry representatives encouraged governments to be flexible and provide important timeline information and regulatory certainty to help ease the deployment of new technology. There were also some reservations about circumpolar regulations, given the diverse nature of the Arctic.

The main outcome from the meeting was that connectivity in the Arctic will depend on different solutions and that there is no “one size fits all” solution. The idea of focusing on connectivity solutions, whether they are local, pan-Arctic or global seems to be the reality in the near future.

The Task Force continued its work in the third meeting in Copenhagen and concentrated on discussions on the draft of a final report and preliminary recommendations on connectivity to be delivered to the Arctic States’ ministers at the Arctic Council ministerial meeting in May 2019. Discussions continued on clarifying who the different users of telecommunications services are and what they need. In particular, maritime and aeronautical safety and search and rescue issues in the work and perspectives of the Arctic Coast Guard Forum (ACGF) and the Working Group on Emergency Preparedness, Prevention and Response (EPPR) were highlighted. The ACGF stressed the need for good and reliable connectivity in an area where different types of land and maritime traffic are predicted to increase, potentially leading to a rise in the number of accidents and responses from relevant authorities. The ACGF underlined the importance of keeping connectivity on the Arctic Council’s agenda in the future and noted the growing need to develop bandwidth capacities across the Arctic to fill the existing communications gaps that continue to raise safety and security concerns. The EPPR underlined that there are both challenges and opportunities related to improving the level of connectivity in the Arctic, with one particular challenge being the difference between connectivity in urban areas and more sparsely populated areas across the circumpolar North. Looking ahead, the EPPR suggested that when enhancing connectivity, one should think of development in terms of both analog and digital communication, to try to secure that all relevant parties in different locations can be reached in any type of incident (e.g., SAR and oil spill response). Being aware of cultural sensitivities and technological knowledge gaps – and discrepancies between routine practices outside the Arctic and traditional ways of life in the North – were often mentioned as important to be aware of in this regard.

The human dimension of connectivity and user needs play a pivotal role. This issue will be highlighted more deeply in the agenda of the fourth meeting, to be organized in Reykjavik in December 2018. In order to get additional input from the Permanent Participants, the Aleut International Association (AIA) volunteered to draft a questionnaire for PPs’ input, and then follow-up with the drafting group as the report begins to take shape. The emphasis in the Levi SAO meeting on 23<sup>rd</sup> of March 2018 was

also on the needs of the different user groups and ways to solve everyday challenges to improve connectivity.

TFICA has been continuing to look for synergies with the Arctic Economic Council and participated in the 3<sup>rd</sup> Arctic Broadband Summit in Sapporo, Japan, in June. It has concluded that the group would benefit from closer cooperation with the AEC to improve the outcome of this work. Due to unexpected circumstances, the AEC was not able to participate in the Copenhagen meeting. An invitation will be sent to the AEC for the next meeting scheduled to take place in Reykjavik from 11-12<sup>th</sup> December 2018.

### **Action by the SAOs**

According to the mandate of the SAO report to the Ministers in 2017, TFICA should recommend how the Arctic Council should continue its work on telecommunications. The Task Force has not yet concluded its work on this matter but has so far discussed a number of options, such as:

- to establish a joint Task Force together with the Connectivity Working Group of the AEC during the next chairmanship (Iceland)
- future work on connectivity could be led by the Connectivity Working Group of the AEC with input from the Arctic States, Permanent Participants and Working Groups
- the topic of connectivity could be discussed regularly through thematic discussions at SAO meetings
- future work on connectivity in the Arctic could be led by one of the Arctic Council Working groups.

The SAOs and the Permanent Participants are invited to provide input to the ongoing work of the TFICA and in particular discuss the ways in which the Arctic Council should address connectivity in the future.