



The subsea cable cut at Svalbard January 2022: What happened, what were the consequences, and how were they managed?

Niels Nagelhus Schia, Lars Gjesvik and Ida Rødningen

Brief summary:

- **Cause:** Unknown
- **Duration:** 11 days
- **Immediate consequences:** Loss of reserve capacity
- **Potential long-term consequences if both cables were cut:** Limited possibility of communication with the mainland with 2G and satellite networks, the data flow from SvalSat was stopped, weakened preparedness, limited air traffic.¹

Background

Svalbard is, like most other societies, largely dependent on an internet connection. The fiber connection on Svalbard consists of two separate subsea cables that connect Longyearbyen to the mainland. In some areas the cables were buried about two meters below the seabed, especially in areas where fishing is done, to “protect against destruction of the fishing fleet’s bottom trawling or anchoring of ships.”²

The cables, which also go by the name Svalbardfiberen, were laid in 2003 and the fiber connection has been operational since 2004. Space Norway AS owns and is responsible for the Svalbardfiberen, which has an expected technical lifetime to approximately 2028.

The fibre-optic Svalbard cable(s) are of great importance, partly because large amounts of data are sent from the

satellite station on Svalbard to the mainland through the cable.³ This satellite station - also known as SvalSat - is a ground station for satellite communication on Platåberget in Svalbard, and with over 100 satellite antennas for downloading data that travel in 'polar orbits', i.e. in orbit over the poles, it is the world's largest of its kind.⁴ In addition, they provide Longyearbyen with internet.⁵ It is also reasonable to say that the cables have an increasing geopolitical importance as a provider of internet connection to an increasingly geographically and geopolitically interesting and attractive place (cf. Middleton & Rønning 2022).⁶

What happened?

On the 7th of January 2022, at 04.10, one of the two sub-sea fiber cables between Svalbard and Harstad lost the signal. According to Space Norway, which owns and is responsible for the cables, the cable break is estimated to have occurred somewhere between 130 and 230 kilometers from Longyearbyen, in an area where the seabed suddenly becomes as deep as 2,700 meters.⁷ A little over a week after the signal break was discovered, Space Norway informed that they were still waiting for equipment from Longyearbyen. It was stated that the equipment was needed to: " (...) limit the damaged area, and the equipment consists of "a power jacket that provides power to the signal amplifiers, which are approximately 100 kilometers apart. - This is how we will find the possible location of the break since the fault lies in a break in the power supply. Then we can narrow down the damage to a few kilometers."⁸ On the evening of Tuesday 18 January, after eleven days of signal failure, data traffic via the damaged fiber cable was restored, and thus also Svalbardfiber's reserve capacity.⁹

There has been speculation as to what the cause of the breach was. Norwegian media outlets were quick to indulge in theories about intentional, man-made damage,¹⁰ seeing the break in light of the tense political situation between Russia and NATO-states, and the fact that Russian trawlers navigated over the cable in the time before the connection was broken.¹¹ However, human sabotage has not been proven. The primary cause of subsea cable breakage globally remains unintended harm by commercial fishing or ships trawling their anchors across cables, as well as natural phenomena and technical failures, and there are numerous incidents each year.¹²

Governor Lars Fause stated in October 2022 that new assessments have been made of the Svalbard fiber after the sabotage of gas pipelines in the Baltic Sea. The governor clarified that even though the risk picture has been reassessed, it is assessed as unchanged,¹³ and no connection between the damage to the gas pipelines and the Svalbard fiber has been proven.

Mitigation

A police investigation was launched by the Troms police

district to find out the cause of the signal failure, and whether it could be due to a criminal offence. However, this was later dismissed as "no criminal offence"¹⁴ due to a lack of evidence, according to a press release from the police on 21 March¹⁵, and it is still uncertain what caused the cable break. Space Norway had continuous contact with the population on Svalbard in the days following the breach.

A third cable to secure the connection if anything should happen to one or both cables has been discussed for a long time prior to this incident. However, a third cable will depend on sufficient funding.¹⁶ October 16th, a new report to the Norwegian parliament was submitted from the Ministry of Justice and Emergency Preparedness. In the report, the government presented initiatives to secure critical infrastructure, among other things expanding on satellite connectivity in the Arctic, including Svalbard.¹⁷

Governor Lars Fause and the Emergency Preparedness Council for Svalbard began work on Saturday 8 January to map the possible consequences of a possible break or damage to both cables at the same time: "We will now run a reinforced risk and vulnerability analysis for Svalbard (...) Where we are particularly working with issues of emergency communication" In particular they looked closer at preparedness, telecommunications and communication by plane.¹⁸ In the wake of the breach, the government was criticized for not communicating clearly enough when events occur that challenge Norwegian digital infrastructure in the north at the same time as increased security political tension.¹⁹

Map



Svalbardfiberen. The fiber connection that connects Svalbard to the mainland. [Obtained from Space Norge.](#)

Consequences

In the wake of the work of the Governor and the Emergency Preparedness Council, the emergency plans for Svalbard were assessed and updated. In its assessment of risk and vulnerability, the Emergency Preparedness Council also looked more closely at consequences and opportunities. The governor stated in an interview with High North News: “The basics are electricity, food and shelter. This will work normally anyway because we have power. But it is clear that the everyday life would be affected without the fiber cable.”²⁰

If damage occurs to one of the cables, it will lead to limited opportunities for communication with the mainland, it will have to be via satellite and 2G network.²¹ If both cables were to be destroyed, much of the communication between Svalbard and the outside world would be lost. This could present greater problems than network loss for the population: the enormous data flow between Svalbard and the mainland from SvalSat will also cease. Even if it would be possible to make a call with a satellite phone, such a situation would still go beyond civil society’s ability to prepare.²²

If both cables fail, another consequence will be limited air traffic. “flights to and from the island works via the internet. But ambulance and military aircraft will work regardless”.²³

It is nevertheless relevant to emphasize that if both cables are damaged, both ambulance and military aircraft, search and rescue and emergency services would function approximately as normal. In addition, the governor’s vessel, Polarsyssel, would be able to assist both with the transport of necessary equipment and staffing and with communication.

Implications and lessons

For Svalbard, having two separate cables ensured connectivity throughout the January 2022 cable break, albeit only with reserve capacity. The resiliency provided by multiple routes, and the fact that roughly 100 cables break on average each year globally²⁴, underline the importance of spare capacity and diversity of internet infrastructure. For natural occurrences, or unintended breakage, resiliency of multiple routes makes cable failures manageable.

The question of intended sabotage of cables is a different proposition, however. Ensuring resiliency when facing coordinated disruptions to submarine internet cables is a challenge even for well-connected states, and the realization of this vulnerability is spurring renewed political attention to physical digital infrastructures by organizations like NATO and its member states.²⁵ The cost in establishing submarine cable connectivity, and the challenges in monitoring and securing infrastructure across large distances of the ocean floor, stresses the need for contingency plans and alternate means of connectivity in the event of geopolitical crisis or conflict.

Endnotes:

- ¹ These are long-term consequences based on a scenario where both cables are either damaged or destroyed, and not real consequences of the incident in January 2022. See: NRK Nordland (26.06.2022): [Kabelmysteriene](#).
- ² Space Norway (23.05.2022): [Svalbardsambandet, verdens nordligste undersjøiske fibersamband](#)
- ³ NRK Nordland (26.06.2022): [Kabelmysteriene](#)
- ⁴ Space Norway (23.05.2022): [Svalbardsambandet, verdens nordligste undersjøiske fibersamband](#)
- ⁵ High North News (18.01.2022): [Fremdeles brudd på fiberkabel til Svalbard: Vi spekulerer ikke i årsaken](#)
- ⁶ Middleton, A. & Rønning, B. (02.08.2022): [Geopolitics of Subsea Cables in the Arctic](#) (The Arctic Institute). Sist lest 18.10.2022
- ⁷ The Barents Observer (11.02.2022): [‘Human activity’ behind Svalbard cable disruption](#)
- ⁸ High North News (18.01.2022): [Fremdeles brudd på fiberkabel til Svalbard: Vi spekulerer ikke i årsaken](#)
- ⁹ Telecom Revy (20.01.2022): [Reservekapasitet på Svalbardfiberen gjenopprettet](#)
- ¹⁰ Telecom Revy (20.01.2022): [Reservekapasitet på Svalbardfiberen gjenopprettet](#)
- ¹¹ NRK Nordland (26.06.2022): [Kabelmysteriene](#)
- ¹² See: <https://blog.telegeography.com/what-happens-when-submarine-cables-break>
- ¹³ Børsen, Dagbladet (04.10.2022): [Vurdert på nytt: - Framstår veikt](#)
- ¹⁴ NRK Troms og Finnmark (21.03.2022): [Politiet henlegger mystisk kabelbrudd – skipper på russisk tråler avhørt](#)
- ¹⁵ Politiet (21.03.2022): [Henlegger sak etter kabelbrudd til Svalbard](#)
- ¹⁶ High North News (18.01.2022): [Fremdeles brudd på fiberkabel til Svalbard: Vi spekulerer ikke i årsaken](#)
- ¹⁷ Ministry of Justice and Emergency Preparedness (16.10.2022): [Samfunnssikkerhet i en usikker verden](#), p. 136
- ¹⁸ NRK Troms og Finnmark (10.01.2022): [Politiet etterforsker fiberbruddet på Svalbard som noe «mulig staffbart»](#)
- ¹⁹ High North News (18.01.2022): [Fremdeles brudd på fiberkabel til Svalbard: Vi spekulerer ikke i årsaken](#)
- ²⁰ Ibid.
- ²¹ Ibid.
- ²² NRK Nordland (26.06.2022): [Kabelmysteriene](#)
- ²³ High North News (18.01.2022): [Fremdeles brudd på fiberkabel til Svalbard: Vi spekulerer ikke i årsaken](#)
- ²⁴ <https://blog.telegeography.com/what-happens-when-submarine-cables-break>
- ²⁵ See for example: https://www.rigzone.com/news/norway_germany_propose_nato_subsea_asset_surveillance_center-02-dec-2022-171253-article/

Niels Nagelhus Schia is a senior research fellow, head of NUPI’s Research group on security and defense, and head of NUPI’s Center on digitalization and cyber security studies.

Lars Gjesvik is a Research Fellow at NUPI’s Centre for digitalization and cyber security studies, as part of the interdisciplinary research project GAIA.

Ida Rødningen has worked at the Norwegian Atlantic Committee, the Norwegian Embassy in Canada, UNHCR in Malaysia and The Arctic Institute. Rødningen has a master’s degree in international security from Sciences Po (2019), and from autumn 2022 she is employed at the defense attaché’s office, the Norwegian embassy in Paris.

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NUPI
Norwegian Institute of International Affairs
C.J. Hambros plass 2D
PO Box 8159 Dep. NO-0033 Oslo, Norway
www.nupi.no | post@nupi.no

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