Indigenous data sovereignty and the East Coast space sector

A grounded overview of the questions that need to be answered

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Abstract

How could the East Coast space sector support Indigenous data sovereignty, and what would we need to establish to know whether it does? This overview develops that question through a sequence of more specific inquiries. A short regional timeline establishes the setting. Indigenous governance sources then help distinguish authority over data from the provision of infrastructure or information. The discussion asks who can define relevant requirements, where a space-sector organization enters a data relationship, and what evidence could demonstrate support. One account of Inuit-led sea-ice mapping provides a concrete reference for asking about purpose, interpretation, and access. The paper then identifies questions that public documents leave unresolved and proposes a way to refine and investigate them through appropriate Indigenous processes, documents, and interviews. Its contribution is a reasoned basis for inquiry. It does not establish local demand, endorse an institutional design, or report an assessment of current practice. A defensible answer would depend on the particular Indigenous authorities, data relationship, and evidence considered.

Introduction

The development of launch and satellite infrastructure in Atlantic Canada provides a setting for asking how the space sector might support Indigenous data sovereignty. The question is easy to state and difficult to answer responsibly. An organization might provide information, offer training, or describe a partnership as beneficial. We would still need to establish whose priorities it serves, who governs the information involved, and whether the relevant Indigenous authorities consider the relationship supportive. An overview can clarify these questions before proposing an arrangement.

The central question is therefore: how could the East Coast space sector support Indigenous data sovereignty, and what would we need to establish to know whether it does? The argument developed here is that an answer must connect the meaning of sovereignty to particular decisions about data. That requires identifying the relevant authority, the purpose of the relationship, the responsibilities of the participating organizations, and evidence of how those responsibilities are exercised. The questions used to examine that relationship must themselves be open to challenge by those whose governance they concern.

This is a question-led documentary overview. Its regional record is bounded by documents available on 27 October 2026, checked during the original review and again on 29 October for this revision. The discussion draws on selected Indigenous governance sources, official project and policy records, research ethics guidance, and one published account of an existing practice. Selection is purposive rather than exhaustive. The questioning sequence organizes the argument; it is not presented as a validated research instrument or a completed participatory method. No interviews, community consultations, inspections, or outcome evaluations were conducted.

Nova Scotia is the geographical anchor, particularly the relationships around Spaceport Nova Scotia near Canso. Satellite services provide a wider context. The paper does not attempt to cover the whole supply chain. It proceeds through six questions, each arising from what the preceding discussion establishes or

leaves unresolved. The purpose is to make a subsequent investigation more precise while allowing it to conclude that existing arrangements are adequate, that additional support is wanted, or that a proposed involvement is inappropriate.

1 What is happening that makes the question relevant

The public record establishes several developments with different institutional meanings. Table 1 keeps those differences visible. An environmental approval, a consultation, an investment announcement, and a provider statement should each be read for what that particular record can establish.

Table 1 A bounded timeline of regional developments

Date	What the record establishes	Question it opens
4 June 2019	Nova Scotia approved the Canso Spaceport Facility Project subject to conditions (Nova Scotia Environment, n.d., 2019).	What information responsibilities follow from the approval, and how are they exercised?
25 February to 13 April 2026	Transport Canada consulted on draft launch application requirements, including public notification and information sharing (Transport Canada, 2026).	Who needs information, for which decisions, and through which responsible process?
16 March 2026	National Defence announced a ten-year, $200 million agreement to lease a dedicated launch pad near Canso (Department of National Defence, 2026).	How do infrastructure objectives relate to authority over particular data?
8 September 2026	Leaf Space announced completion of a ground station at the site and prospective S-band and X-band download support (Leaf Space, 2026).	What would connect a receiving facility to information useful for Indigenous governance?
October 2026	Innovation, Science and Economic Development Canada published a consultation on space legislation and regulation, including ground stations and data (ISED, 2026).	Where could responsibilities concerning data be examined within policy development?

The final column contains this paper's questions, rather than findings of the cited sources. The timeline establishes a concrete setting for inquiry. It does not establish Indigenous consent, delivered community benefits, or authority over a particular dataset. The National Defence release's end-of-2026 capability requirement concerns the pad and associated services; its separate light-lift initiative has a 2028 target. These are announced requirements and targets. Leaf Space's account is a provider statement, while the consultations concern proposals.

The approval conditions provide a more specific institutional starting point. They address compliance reporting, environmental plans and monitoring, complaints, a community liaison committee, and a Mi'kmaq communication plan at the Department's request (Nova Scotia Environment, 2019, conditions 3.3, 4.8–4.9, 9.2, 9.4, 10.1). Such provisions give researchers named processes to examine. Their presence does not demonstrate how information is governed in practice.

We can therefore establish why the question belongs in this regional discussion. We cannot infer its answer from the existence of infrastructure or a formal engagement process. The next step is to clarify what supporting Indigenous data sovereignty would mean.

2 What would supporting Indigenous data sovereignty mean

The starting point should be Indigenous accounts of authority and responsibility concerning data. UNDRIP recognizes participation through Indigenous Peoples' own representative institutions and rights concerning cultural heritage and knowledge. Articles 19 and 32 address State consultation and cooperation to obtain consent in the circumstances specified there (United Nations, 2007, arts. 18–19, 31–32). These provisions give grounds for examining who makes decisions and whose authority applies. They do not supply a complete project protocol.

The First Nations Information Governance Centre describes OCAP® through ownership, control, access, and possession, expressed in accordance with each Nation's worldview and protocols. It identifies these as First Nations principles, with interpretations determined in context (First Nations Information Governance Centre [FNIGC], n.d.). OCAP® is a registered trademark of the First Nations Information Governance Centre. The CARE principles likewise direct attention to Collective Benefit, Authority to Control, Responsibility, and Ethics (Carroll et al., 2020). These sources help formulate questions about authority, purpose, and consequences; citing them does not establish a project's endorsement or compliance.

For this inquiry, supporting sovereignty would mean contributing to the relevant Indigenous People's ability to govern the data relationship on terms grounded in its authority and priorities. That is a provisional analytical formulation. It needs examination in the particular setting. The inquiry includes information needed for Indigenous governance and data concerning Peoples and territories, whether generated by Indigenous communities or other institutions (Carroll et al., 2020, The Emergence of Indigenous Data Sovereignty).

This formulation changes what we would look for. Access to information may be useful, but we would also ask who decided what should be collected, how it should be interpreted, and whether it may be used for another purpose. A decision to withhold some information may be part of governing the relationship. Resources matter because an agreed role may require time, expertise, and continuing support to exercise.

We now have a basis for asking what support could concern. We have not established who can specify the requirements in Nova Scotia or judge whether they are met. That question cannot be settled through the researcher's interpretation of general principles alone.

3 Who can define the requirements and judge the support

The first task is to identify the relevant Indigenous Peoples and the processes through which authority concerning the particular data or knowledge is exercised. The inquiry should ask who has a mandate for which decisions, how that mandate is identified, and whether authority differs across the activities under consideration. A single category such as community representative is insufficiently precise for this purpose.

TCPS 2 Chapter 9 provides a research reference: it recognizes complex and diverse authority structures, including customary knowledge authorities, and supports community involvement in research (Canadian Institutes of Health Research et al., 2022, arts. 9.5–9.6, 9.12, 9.15, 9.17). Its provisions do not allocate every operational decision in a space project.

The same care is needed when distinguishing Indigenous authority from the powers and duties of other organizations. A regulator, operator, researcher, and data provider may each have different responsibilities. Identifying those responsibilities helps establish what each can actually decide or promise. Their acknowledgment does not create Indigenous authority, and their failure to acknowledge it

does not by itself extinguish it. Where obligations or claims conflict, the disagreement needs to remain visible for appropriate assessment.

Other community members and organizations may have important privacy, confidentiality, or participation interests. Those interests should be examined on their own grounds. This paper concentrates on Indigenous data sovereignty so that its questions about collective authority remain explicit. It does not presume that one set of permissions can represent all interests in the surrounding region.

The research questions must also be subject to scrutiny. Relevant Indigenous authorities and participants should have an opportunity, through the appropriate process, to explain whether the proposed inquiry concerns their priorities, omits an important decision, or asks for information that should remain restricted. The immediate research task is thus to establish who should help define the inquiry and what it may appropriately examine. A bounded data relationship is needed to make that task concrete.

4 Where does the space sector enter the relationship

The unit of inquiry should be a particular relationship involving a consequential decision about data. This could be investigated through its purpose, the authority supporting collection or access, the interpretation of information, and any proposed subsequent use. Following an actual decision would help identify which responsibilities belong to a space-sector organization and which lie elsewhere.

The Canso registration document reports that a Mi'kmaq Ecological Knowledge Study drew on knowledge-holder interviews in 2017–2018 (Strum Consulting, 2018, §8, pp. 107–108). That is a documented reason to ask about existing information relationships. It does not establish present custodianship or permission for this research to access or reuse the knowledge. An initial inquiry could seek clarification of the responsible governance processes without seeking the protected knowledge itself.

The question then becomes more precise: when an organization seeks to use information within a relationship of this kind, whose authorization is relevant, what purpose is permitted, and who is responsible for responding to a restriction or concern? A researcher could investigate the governing process and its decision record where access is authorized. The existence of a study or agreement alone would leave questions about its current application unresolved.

The sector's possible contribution also depends on where it enters this relationship. Hosting a ground station does not establish control over every observation it receives or every resulting product. A proposed partner's actual role needs to be identified before suggesting what it could support. We would need to ask whether the relevant contribution concerns data access, analytical work, a decision process, or another need identified by the Indigenous participants. There may be no useful role for a particular organization.

We can now ask what support could look like in practice, using one existing activity as a reference.

5 What could support look like in practice

Beaulieu et al. (2023, §2 and Data availability statement) describe the Inuit-led Sikumik Qaujimajjuti sea-ice mapping programme. Their account reports community committees governing activities and Inuit map makers combining satellite imagery with local knowledge. Their data statement says access to the presented maps requires community permission. This is a participant-authored perspective, rather than an independent outcome evaluation.

The account links satellite information to local interpretation and decisions about use. Its suitability for Mi'kmaw circumstances remains open, as does the role a launch-sector organization could play.

Which local purposes and decision roles would matter? Who could undertake the supporting responsibilities, and what evidence would show whether the relevant Indigenous authority can be exercised?

6 What remains unanswered and how could we investigate it

The preceding steps identify what an answer would need to connect: a purpose considered relevant by the Indigenous participants, the authority governing the relationship, the responsibilities of the participating organizations, and evidence of what happens when a decision is made. Public documents can identify some commitments and processes. The review has not established how the relevant parties understand or exercise them.

Table 2 sets out a small set of provisional research questions. Their wording and relevance would need to be refined through the appropriate Indigenous processes. The evidence holders listed are possible sources of knowledge, not a recruitment list or a finding about who holds authority.

Table 2 Questions derived from the inquiry

Question	Evidence that could help answer it	People or roles to identify
What purpose and requirements should govern this relationship?	Authorized protocols, mandates, accounts of priorities	Relevant Indigenous authorities and designated knowledge governance roles
What can the participating organization decide or provide?	Applicable agreement, responsibility record, description of its actual role	Responsible organizational decision makers and relevant public authorities
What happens when a permission, restriction, or concern is raised?	An authorized decision history, reasons, correspondence, or permission record	Those exercising the authority and those responsible for responding
What would count as useful support, and what would challenge that judgment?	Participants' criteria, resources required, evidence of use, unresolved concerns	Relevant Indigenous authorities, participants, and others with agreed responsibilities

The investigation should start by establishing the proper governance and review processes. Current Mi'kmaw Ethics Watch guidance says research without direct participants may still require review and directs uncertain exemption cases to MEW for assessment (Mi'kmaw Ethics Watch, n.d.). Requirements for this desk review and any subsequent study should be confirmed with MEW and the relevant institution. No approval, exemption determination, or community endorsement is claimed here. The appropriate requirements must be addressed before the research activities to which they apply.

Research agreements offer a reference for clarifying responsibilities. Where formal engagement occurs through a designated representative, TCPS 2 Article 9.11 recommends an agreement before recruitment; its application addresses information use, including secondary use, and dissemination. Article 9.12 describes participatory inquiry where appropriate to the research and the engagement desired by the community (Canadian Institutes of Health Research et al., 2022). The form and terms would need to be established through the relevant community and institutional processes. Community agreement does not replace individual informed consent for interviews.

An initial study could examine one agreed relationship through documents and interviews focused on a specific decision. It would first record what is already known and why each unresolved question matters. Where access is authorized, the research could then follow how a requirement was communicated, who considered it, which instrument applied, and how the resulting action or explanation was experienced by the parties. Differences between a written commitment and participants' accounts should be investigated rather than resolved by assuming either source is complete.

The questions would be strongest when they concern something respondents can describe or substantiate. A broad question about whether a partnership is respectful could be followed by asking how a proposed use was authorized, what happened when it changed, and how a concern could be raised. The relevant records may establish a permission process without exposing the knowledge it protects. Researchers should distinguish evidence of routine practice, a single event, and a hypothetical preference.

Assessment would require criteria developed through the relevant Indigenous governance processes, taking account of participants' views and the responsibilities and constraints of the other organizations. The proposed inquiry would ask whether the relevant authority can be exercised in the decisions concerned, whether responsibilities are understandable and resourced, and whether participants regard the resulting information or process as useful for their purposes. These are provisional prompts, not a universal sovereignty score. A finding that existing provision is adequate, that priorities lie elsewhere, or that participation is declined would be a substantive result.

The study would need to report its limits. An interview account cannot by itself establish compliance or represent every view within a Nation. A small qualitative inquiry cannot, by itself, estimate the sector's overall economic or environmental effects. It can produce a clearer account of the selected relationship, disagreements about it, and the questions that remain. Decisions about further research or implementation would follow those findings. This overview does not presume that a new institution or technical system is required.

Conclusion

The regional record establishes a setting in which to ask how the space sector could support Indigenous data sovereignty. Indigenous governance sources give reasons to examine authority and purpose, while the mapping precedent describes a specific way those concerns have entered an activity using satellite information. Together, these materials support a more precise inquiry; they do not establish the performance or legitimacy of arrangements in Nova Scotia.

A responsible answer would concern a defined relationship and the Indigenous authorities relevant to it. It would explain what support means in that setting, which decisions a participating organization can affect, and what evidence shows that agreed responsibilities are exercised. The research questions themselves must remain open to correction through the appropriate Indigenous processes.

The next contribution is therefore achievable without promising an ecosystem-wide solution. It is to refine the questions with the relevant parties, investigate one appropriately bounded relationship, and establish what can and cannot be concluded from its documents and decisions. That would provide a grounded basis for deciding whether further support is wanted and what it would need to accomplish.

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