The Canadian Consortium for Arctic Data Interoperability: An Emerging Initiative for Sharing Data Across Disciplines

Shannon Christoffersen Vossepoel[1]*, *Maribeth S. Murray*[1]

[1]* Arctic Institute of North America, University of Calgary, ES 1040, 2500 University Dr. NW, Calgary, Alberta T2N 1A4, Canada
Email: shannonv@ucalgary.ca

Summary. The Canadian Consortium for Arctic Data Interoperability (CCADI) is a consortium of Canadian-based polar institutions that aims to advance information sharing, nationally and internationally, through the development of an integrated Canadian arctic data management system. This proposed system will facilitate information discovery across disciplines and data types, establish metadata and data sharing standards, enable interoperability among Canada's existing data infrastructures, and will be accessible to a broad audience of users. Established in 2015, the CCADI (http://ccadi.ca/) has made great progress toward this vision and has laid the groundwork for future development.

Keywords. Canadian Consortium for Arctic Data Interoperability, information sharing, interoperability, standards, ethically open data.

1. Introduction

The Canadian Consortium for Arctic Data Interoperability (CCADI) consists of partners from academic, Inuit, government, and non-profit institutions. Current membership includes the Arctic Institute of North America, University of Calgary; GeoSensor Web Lab, University of Calgary; Innovis Lab, University of Calgary; Geomatics and Cartographic Research Centre, Carleton University; Centre d'études nordiques, Université Laval; Centre for Earth Observation Science, University of Manitoba; Faculty of Law, University of Ottawa; Canadian Cryospheric Information Network and Polar Data Catalogue, University of Waterloo; Inuit Tapiriit Kanatami; Inuvialuit Regional Corporation; Natural Resources Canada, Polar Knowledge Canada; Cybera Inc.; Polar View; and Sensor Up Inc [1]. This diverse partnership has established an excellent forum for working with the unique multidisciplinary data of the Arctic.

Created in 2015, the CCADI is committed to advancing collaboration, both nationally and internationally, around arctic information and data sharing [1].

2. The CCADI and Information Sharing

The CCADI is working to develop an integrated Canadian arctic data management system that will facilitate the discovery of information across numerous data types, both qualitative and quantitative; enable interoperability among existing arctic data infrastructures, both Canadian and international; establish metadata and data sharing standards for Canadian arctic data that will facilitate international data sharing; and that is accessible to a broad audience of users [1].

The CCADI is also working with Inuit organizations to ensure that Inuit Knowledge is appropriately represented; that Inuit are involved in the design and development of cyberinfrastructure involving their data and that they have stewardship over its distribution; and that Inuit Knowledge and western science can be explored for synergies and areas of interoperability. In support of this work, the CCADI follows the International Arctic Science Committee`s precepts for "ethically open data" as

outlined in their *Statement of Principles and Practices for Arctic Data Management* [2].

3. Progress Towards the Vision

Since its establishment, the CCADI has been making strides toward implementing its goals for information sharing. CCADI members are active contributors to the Arctic Data Committee (ADC) of the International Arctic Science Committee and Sustaining Arctic Observing Network, the International Study of Arctic Change (ISAC), the Open Geospatial Consortium (OGC), the Research Data Alliance (RDA), World Data System, and the Polar Libraries Colloquy [1]. CCADI members also meet regularly and have been successfully working on human interoperability within CCADI and growing our network of partners. Additionally, CCADI has been actively working on funding applications to begin development on the cyberinfrastructure required to support these goals.

4. Conclusions

The status of the CCADI initiative and its stated goals for advancing arctic information sharing in Canada and internationally are summarized in this paper. While still a new initiative, the CCADI has made some good progress towards its goals. Pending funding support, the CCADI is well-positioned to make significant advancements for arctic data and information sharing in the next five years.

References

1. The Canadian Consortium for Arctic Data Interoperability, http://ccadi.ca. [accessed on: October 2017]
2. International Arctic Science Committee. *Statement of Principles and Practices for Arctic Data Management.* April 16, 2013 https://iasc.info/data-observations/iasc-data-statement. [accessed on: October 2017]