InterPARES 2 Project
International Research on Permanent Authentic Records in Electronic Systems

Areas That Should Be Covered
Validated

Case Study 06:
Cybercartographic Atlas of Antarctica

Geneviève Sheppard, UBC
(with input from Tracey Lauriault)
Version 2, January 2005

Creator of the Fonds

TOPIC	SPECIFICS	SOURCE
Name	The Geomatics Cartographic Research Centre (GCRC), an organized research unit in the Department of Geography and Environmental Studies at Carleton University. This unit is leading the Cybercartographic Atlas of Antarctica (CAA) Project.	FR, pg. 3 (sections A-C)
Location	Ottawa, Canada	FR, pg. 3 (sections A-C)
Origins	Information on the origins of GCRC is not available in the final report. See https://gcrc.carleton.ca/confluence/display/GCRCWEB/Overview The CAA: • Part of a larger Social Sciences and Humanities Research Council of Canada (SSHRC) funded project entitled, Cybercartography and the New Economy (CANE) which began in January 2003. • The Canadian Committee for Antarctic Research approved the CAA project in 1999 and re-endorsed as a SCAR project in 2002	FR, pg. 3, 5 (sections A-C)
Legal Status	GCRC is a research unit within the Department of Geography and Environmental Studies at Carleton University	FR, pg. 3 (sections A-C)
Legislation	Information not available in the final report	
Norms	The creator adheres to methodologies relating to scientific research and geography and Carleton University rules and regulations and code of ethics	Inferred from final report
Funding	The GCRC receives funding for CANE from SSHRC (under the Initiative on the New Economy (INE) Program); CAA infrastructure is also funded by the Canada Foundation for Innovation	FR, pg. 3 (sections A-C)
Resources	The GCRC currently operates out of the Social Sciences Research	Tracey

	Building on the second floor. There is an office for the project Manager, 1 post doctoral fellow office, 1 shared meeting room, and offices for the 3 PHD candidates, there is a geomatics Lab, and 2 technology specialist offices. The primary investigator utilizes his Geography Faculty office. A new building is under construction and a new laboratory and facilities will be available in the summer of 2006. For Technology related to the project see – appendices H and I for software and hardware.	Lauriault
Governance	The GCRC is directed by Dr. D.R. Fraser Taylor: • 21 members and research associates who are leaders in Geographic Information Processing • There are formal agreements of cooperation between the GCRC and international organizations, and a Memorandum of Understanding with Natural Resources Canada The CAA is carried out through a partnership of research laboratories at Carleton University, international team of Antarctica scientists and multimedia visualization experts: • There are 13 collaborators and an Advisory Board for the CANE project. • At any given time, there is one Phd Candidate who is the lead researcher on the project and 1 Post Doctoral Fellow that participate in the management of the CAA, approximately 10 graduate students have contributed research, 2 students are involved with editing content, and two technology specialists with the Lead researcher direct production, • The Scientific Committee for Antarctic Research (SCAR) are expert advisors • There is a project Manager and an Assistant Office Administrator for the CANE project • The CAA operates based on a task/theme based approach • Numerous stakeholders, data providers and partners from industry, government and non-governmental organizations both in Canada and a number of other countries (see http://gcrc.carleton.ca and Appendices K – List of Data Sources and M – Atlas Framework in the final report)	FR, pg. 3 (sections A-C) Tracey Lauriault Tracey Lauriault
Mandate	To increase knowledge of human interaction with geospatial information.	GCRC Web site
Philosophy	The GCRC focuses on Geographic Information Processing (GIP), Multimedia Cybercartography, Visualization and Remote Sensing and the application of information and communications technologies in an international context.	FR, pg. 4 (sections A-C)
Mission	To conduct research on the application of geomatics to the understanding of socio-economic issues, the theory of cartography and cartographic education in an international context. The CAA expands this mandate by including the application of geomatics to the understanding and integration of scientific information.	GCRC Web site Tracey Lauriault
Functions	Research in cybercartography and high resolution remote sensing for surveying and mapping and natural resources applications.	FR, pg. 4 (sections A-C); GCRC Web site
Recognitions	Information not available in the Final Report See publications at https://gcrc.carleton.ca/confluence/display/GCRCWEB/Publications	Tracey Lauriault

Activities Resulting in Document Creation		
Administrative & Managerial Framework		
TOPIC	*SPECIFICS*	*SOURCE*
General Description	The creator is developing the CAA	FR
Type of activities	Activities related to developing the CAA: • Content creation • Technology rendering the creator's intent	FR, pg. 5, 11 (sections C, D)
Documents resulting from activities	Operational records: • Contracts, correspondence, minutes, reports, other documents directing the intellectual and technical framework of the CAA • See all the final report appendices	FR, pg. 11 (section D) Tracey Lauriault
Existence of a RM and/or archives program	No; the creator keeps digital entities in the production environment, but there is no actual recordkeeping system. However, a plan is in place to test and assess transferring the CAA to the Carleton University Data Library.	FR, pg. 15 (section D) Tracey Lauriault
Individuals responsible for preservation	Information not available in the final report. Dr. D. R. F. Taylor the Primary Investigator for the CANE project directs these activities, Tracey P. Lauriault through InterPARES 2 work related to CAA ensures the issues remain in the forefront and are discussed, and the Lead Researcher with the two technology specialists oversea the production aspects of preservation.	 Tracey Lauriault
Existence of Preservation Strategies	Information not available in the final report. However, the report does includes information related to metadata, open source, interoperability, a production environment with manuals, and see core research question 9, also see question 13. Changes to the code are captured in Subversion, a source repository system used by the project. All objects are digital, all are backed up, all are on a central server in the technology specialists office, use of open source technologies provides a technical environment that ensures there will not be any technological obsolescence,	 Tracey Lauriault Tracey Lauriault
Legal Requirements and Constraints	Information not available in the final report. The CANE project is mandated by its funding agency SSHRC to archive the Research which includes the CAA	 Tracey Lauriault
Normative Requirements and Constraints	The CAA project itself has processes and procedures to be followed (e.g., the Author's Toolkit, Designer's Manual, Training courses). Subject specialists also adhere to the practices and procedures of their own disciplines. See final report appendices N, O, P, Q, T	FR, pg. 12, 13 (section D) Tracey Lauriault
Technological Requirements	Equipment: • Content creators work on personal computers which can be	FR, pg. 12 (section D)

and Constraints	hooked up to a network environment Type of media: Textual	
	Individual content creators define their own processes and procedures (choose own software), but then need to integrate their content into the CAA (XML schema).	FR, pg. 11, 12 (section D)
	The creators must submit instructions to explain the intended functionality and how the data are to be represented (colour, font, lines, etc.).	
	Any digital object in the CAA must be described by the creator using metadata standards adopted by the project.	Tracey Lauriault
	See the following final report appendices: H. Project Software List I. Project Hardware List J. Mime Encoding of potential project software K. List of Data Sources for the Cybercartographic Atlas of Antarctica L. Antarctic Digital Data Web Feature Server Development Notes M. Atlas Framework, Model and File Types - Freiburg Paper and Presentation N. OpenGIS® Reference Model O. How the Atlas Works and Instructions for Creators P. List of Standards Adhered to on the Project Q. The Cybercartographic Atlas of Antarctica Development Framework R. Atlas Creative Process - Acte Cybercartographique S. Cybercartographic Atlas Framework Presentation V. GCRC Project Forum W. Project Record Keeping Directory X. Dublin Core Report Footer Y. Project Communication Internet Site	

Digital entity being studied		
General Description	- A dynamic, interactive, Internet-based, open source atlas portraying, exploring and communicating the complexities of the Antarctic continent for education, research and policy purposes. - The purpose of the CAA is to inform and educate users about Antarctica and its relationship to the global environment	FR, pg. 5 (sections A-C) FR, pg. 7 (section D)
Type of activities	Creation of content files to be included in the CAA	FR, pg. 12 (section D)
Documents resulting from activities	The CAA: - Web-based, online, multimedia, cybercartographic atlas - Content modules within the CAA - External data sources - Body of records generated by Human Oriented technology Laboratory (HOTLab) to support development in the navigation and user interface design of the CAA - Code in the open source community - Forum, wiki, Web site, knowledge network, academic papers books, database, multimedia objects, proof of concepts related to the CAA production	FR, pg. 1, 2, 5, 11, 12, 13 (section D) Tracey Lauriault

	• See core research questions 9 and 13 in the final report (pg. 13-14, 15)	
Existence of Preservation Strategies	• Version control and backup capability (done every 6 weeks) • Carleton University Library is working to archive the CAA as it exists at the end of the project • see core research question 13 in the final report (pg. 15)	FR, pg. 16 (section D) FR, pg. 17 (section D) Tracey Lauriault
Legal Requirements and Constraints	Intellectual property laws apply	FR, pg. 18 (section D)
Normative Requirements and Constraints	• Professional practices • Academic ethical practices • Requirements of the funding agency and Carleton University • Any digital object that is part of the CAA must be described by the creator, using metadata standards adopted by the project	FR, pg. 12, 18 (section D)
Technological Requirements and Constraints	The CAA is an open source and standards-based, interoperable, Internet product that contains some proprietary formats. Wide variety of digital components: (for specific detail refer to final report page 6-8 of section D, and appendices P & R) Equipment: • Databases • Spreadsheets • Virtual reality fly-through • Operating system • Middleware – Linux Redhat Enterprise V4, Apache Server, TomCat, PROJ, GEOS, Goeserver, Degree, Java SDK, XML Libraries, WFS, WMS/WCS Media: • Text, Graphics, Sound, Moving Images, Animation, interactive maps, Programming languages: • Javascript, Java, SVG, DHTML, XML	FR, pg. 6 (sections A-C) FR, pg. 5-6 (section D)