	14 Implementation of a Nature-GIS node: practical considerations	era-
	CIOIIS	1 10
	14.1 Data requirements	149
	14.1.1 Metadata	140
	14.1.2 Mapping to existing databases & Publishing	150
	14.2 Hardware and software requirements	. 152
	14.2.1 Components The web server lover	. 152
	The web server layer	. 152
	The processing layer	. 152
	The data layer	. 153
	Data Server	. 153
	Processing	. 153
	Web Server	. 154
	14.2.3 Hardware requirements	. 155
	Data Server	150
	Web Server / Web Services Server	156
	internet Connection	150
	14.2.4 Example architecture	157
	14.2.0 Security	157
	web services security	150
	Chefit side security	150
	11.5 Checklist for deploying a Nature-GIS node	160
	14.5.1 Data and spatial data Services	160
	14.5.2 Software	101
	14.5.5 nardware	160
	14.5.4 Configure the Web Services	100
	14.4 Metadata and Catalogue	169
	14.4.1 Applications	164
	14.4.2 Describe and publish your use case	. 165
A	List of Existing Networks on Protected Areas	167
	National driving policies	173
C	TIME	110
C	UML syntax	191
D	Nature-GIS Metadata profile	196
E	Glossary	203
Bi	bliography	200

Bibliography

- [1] European Space Agency and Commission of the European Communities. Global Monitoring for Environment and Security, Final Report for the GMES Initial Period (2001-2003). February 2004.
- [2] Wyatt Barry, Briggs David, and Ryder Peter. Building a European information capacity for environment and security. A contribution to the initial period of the GMES Action Plan 2002—2003. Number EUR 21109. European Commission Community Research Studies on Sustainable Development, Global Change and Ecosystems, 2004.
- [3] Max Craglia and Alessandro Annoni. The Spatial Impact of European Union Policies. Number EUR 20121 EN. European Communities, 2003.
- [4] Max Craglia, Alessandro Annoni, Robin S. Smith, and Paul Smits, editors. Spatial Data Infrastructures: Country Reports. Number EUR 20428 EN. European Commission - Joint Research Centre, 2002.
- [5] Martin Fowler and Kendall Scott. UML Distilled, A Brief Guide to the Standard Object Modeling Language. Addison-Wesley, second edition, 2000.
- [6] Communication from the Commission COM(2001)264 final. A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development, 2001.
- [7] International Organization for Standardization, Technical Committee 21, Geographic information/Geomatics. ISO 19101:2003, Geographic information Reference Model, 2002.
- [8] International Organization for Standardization, Technical Committee 21, Geographic information/Geomatics. ISO 19107:2003, Geographic information Spatial Schema, 2003.
- [9] International Organization for Standardization, Technical Committee 21, Geographic information/Geomatics. ISO 19115:2003, Geographic information Metadata, 2003.
- [10] IUCN. Guidelines for protected area management categories. CNPPA with the assistance of WMCA. IUCN, Gland, Switzerland and Cambridge (UK), 1994.
- [11] Humblet J-P., Sonnet J., and Margoulies S. Design an Interoperable Spatial Data infrastructure with ISO/OGC. Technical report, IONIC Software

- S.A., http://www.ionicsoft.com/communities/technicals/modelisation/, 2003.
- [12] Kris Kolodziej. OpenGIS web map server cookbook. Technical Report 03-050r1, Open Geospatial Consortium, August 2003.
- [13] Ron Lake, David Burggraf, Milan Trninić, and Laurie Rae. Geography Mark-Up Language, Foundation for the Geo-Web. Wiley, 2004.
- [14] Paul Longley, Michael Goodchild, David Maguire, and David Rhind. Geographic Information Systems and Science. Wiley, Chichester, 2001.
- [15] Keating Michael. The Earth summit's agenda for change: a plain language version of Agenda 21 and the other Rio Agreements. The Centre for Our Common Future, Geneva, Switzerland, 1993.
- [16] Paul Miller. Interoperability. what is it and why should i want it? Ariadne, Originating URL http://www.ariadne.ac.uk/issue24/interoperability/intro.html, (24), 2000.
- [17] Robert J. Muller. Database Design for Smarties, Using UML for Data Modeling. Morgan Kaufmann, 1999.
- [18] United Nations. Rio declaration on environment and development, Report on the United Nations conference on environment and development, Rio de Janeiro, 3–14 June 1992, A/CONF.151/26 (Vol. I).
- [19] Douglas Nerbert, editor. Developing Spatial Data Infrastructures—The SDI Cookbook. GSDI, Global Spatial Data Infrastructure, 2nd edition, January 2004.
- [20] Commission of the European Communities. Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds. Official Journal of the European Communities, (L 103):1–25, April 1979.
- [21] Commission of the European Communities. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Communities, (L 206):7–50, July 1992.
- [22] Commission of the European Communities. Council Regulation (EEC) No 3508/92 of 27 November 1992 establishing an integrated administration and control system for certain Community aid schemes. Official Journal of the European Communities, (L 355):1–5, 1992.
- [23] Commission of the European Communities. Council Regulation (EC) No 1593/2000 of 17 July 2000 amending Regulation (EEC) No 3508/92 establishing an integrated administration and control system for certain Community aid schemes. Official Journal of the European Communities, (L 182):4–7, 2000.
- [24] Commission of the European Communities. Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Official Journal of the European Communities, (L327):1–73, 2001.

- [25] Commission of the European Communities. Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment. Official Journal of the European Communities, (L197):30–37, 2001.
- [26] Commission of the European Communities. Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme. Official Journal of the European Communities, (L 242 of 10/9/2002), 2002.
- [27] Commission of the European Communities. Directive 2003/4/EC of the European Parliament and of the Council. Official Journal of the European Communities, (L 41):26–31, February 2003.
- [28] Commission of the European Communities. Directive 2003/98/EC of the European Parliament and of the Council. Official Journal of the European Communities, (L 345):90–96, December 2003.
- [29] Open GIS Consortium Inc. Gazetteer Service Specification, OpenGIS Draft Candidate Implementation Specification Discussion Paper, OGC 01-036, March 2001.
- [30] Open GIS Consortium, Inc. Web Map Service Specification, OpenGIS Implementation Specification, OGC 01-068r2, January 2001.
- [31] Open GIS Consortium, Inc. Web Feature Server, OpenGIS Implementation Specification, OGC 02-058, September 2002.
- [32] Open GIS Consortium, Inc. OWS1 Registry Service, Open GIS Draft Specification 0.7.3, OGC 02-050r6,, January 2003.
- [33] Jos Van Orshoven. Spatial Data Infrastructures in Europe: State of Play Spring 2003. Technical report, Spatial Applications Division K.U.Leuven Research & Development, August 2003.
- [34] Jos Van Orshoven. Spatial Data Infrastructures in Europe: State of Play Spring 2004. Technical report, Spatial Applications Division K.U.Leuven Research & Development, August 2004.
- [35] Els De Roeck, Danny Vandenbroucke, Angelo Salsi, and Steve Peedell. Land Cover in the context of the NATURA 2000 network. Technical report, Towards agri-environmental indicators, Topic report 6/2001, EEA., 2001.
- [36] Alhir Sinan. UML In a Nutshell, A Desktop Quick Reference. O'Reilly, 1998.
- [37] Paul C. Smits, editor. INSPIRE Architecture and Standards Position Paper. March 2002.