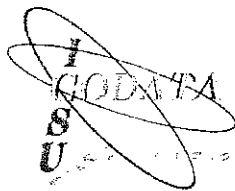


A2-60
2000



17th International
CODATA Conference

POSTER ABSTRACTS

CODATA 2000

17th International
CODATA Conference
15-19 October, 2000 - Baveno, Italy

ST. EL. INF.
BIBLIOTECA

Postiz. Archivio

A2-60(2000)

**DATA AND INFORMATION FOR THE
COMING KNOWLEDGE MILLENNIUM:**

**Science and Technology in the
Quest for a Better World**

**15-19 October 2000
Baveno, Italy**

CODATA Secretariat, 51 Bld de Montmorency, 75016, Paris.
Ph: + 33 1 45 25 04 96, Fax: + 33 1 42 88 14 66, E-mail: codata@dial.oleane.com, <http://www.codata.org>

Monday October 16, 2000
Posters
(In main corridor)

Theme: Integration of Heterogeneous Databases and Data Warehousing

- 1. Integration Methodology for Heterogeneous Databases** **Page 1**
G. Salzano (France)
- 2. Integration and Metadata Assisted Inquiry in Public Statistical Information Systems**
P. Anglioni (Italy)
- 3. Adaptive Mapping Model for Data Clustering and Visualization** **Page 2**
J.C. Lamirel , X. Polanco and C. Francois (France)
- 4. An Architecture for Data Warehouse Systems Using and Heterogeneous Data Management System-Heros** **Page-3**
D. Silva S. Siqueira, H. Braz, E. Uchôa and R. N. Melo (Brazil)
- 5. Semantic Schemata Integration in the MADS** **Page 4**
A. Sotnykova, S. Monties and S. Spaccapietra (Russia)
- 6. Integration of Keyword Based Source Search and Structure Based Information Retrieval** **Page 6**
G. Suzuki, Y. Iizuka and S. Kasuga (Japan)
- 7. On Transaction Management in Federated Information Systems** **Page 7**
M. E. Rodriguez and F. Saltor (Spain)

Theme: Physico-Chemical Standards and Databases

- 8. Database for Phase Diagram Calculation Data in Steel Systems** **Page 8**
B-J. Lee, H.-S. Park, and S.-C. Hong (Republic of Korea)
- 9. Information System for Testing Thermal Non-equilibrium Process Models** **Page 9**
A.L.Sergievskaia, S.A.Losev and E.A.Kovach (Russia)

Theme: Volcanical, Seismogological and Other Geophysical Data Management in the 21st Century

- 10. Free Access to Data - Necessary Condition for Geomagnetic Activity Forecasts** **Page 9**
P. Hejda and J. Bochnicek (Czech Republic)

Theme: Management of Data, Information and Knowledge

- 11. Data Management Exercises with Microclimatic Data-Easy Tool** **Page 10**
S. Krishnamurthy, G. B. Pezatti and J. M. Favre (Switzerland)

Theme: Information and Data: Visualization and Discovery

- 12. The Application of the Geosight Approach for Spatio-Temporal Data Mining of Environmental Data Sets** **Page 11**
M. Wachowicz (The Netherlands)
- 13. Knowledge Discovery for CODATA: Possibilities and Limitations** **Page 12**
Z. S. Hippe (Poland)

Tuesday 16, 2000
Posters
(In main corridor)

Theme: Biodiversity, Life and Medical Sciences

- 1. Database of Korean Native Higher Fungi** Page 13
Duck-Hyuan Cho, So-Young Chang, Keuk-So Bang,
Hyung-Seon Park and Bu-Young Ahn (Republic of Korea)
- 2. Generating a Data Base Using GIS and Remote Sensing to Understand the Marine Biodiversity of Indian Ocean Ecosystem** Page 13
S. Shanmuganandan (India)
- 3. Risk Assessment of Skin Cancer Based on Critically Validated TDS Data** Page 14
Z. S. Hippe (Poland)
- 4. Bioinformatics in a Global Risk Assessment Strategy of Chemicals** Page 15
J.R. Chretien, M. Pintore and F. Ros (France)
- 5. Computer Chemistry Approaches in TCM and New Drug Discovery** Page 15/16
Jiaju Zhou (China)
- 6. Data Assessment for Studying the Health Impact** Page 17
N. Sorokovikova (Russia)
- 7. Green House Gasses Emission from Agricultural in Taiwan** Page 17/18
Shang-Shyng Yang (Academy Located in Taipei)
- 8. Rare Trisomies and the World Wide Web** Page 18
D. Bruns (USA), P. Benvenuti (Italy), K. Schuler (Australia) and M. Collinsworth (USA)
- 9. The Computer Informational System for Trichinellosis Infection** Page 19
A.L. Sergievskaya, E.A. Kovach, T.P. Sabgaida and A.M. Bronstein (Russia)
- 10. Malaria Related Data** Page 20
N. A. Shehata (Egypt)
- 11. A 3-D Display of Ethnobotany Population in Korea Using GRASS** Page 20/21
Haeng-Gon Lee, Mu-Yeol Kim, Il-Seok Oh, Hyung-Seon Park and Bu-Young Ahn (Republic of Korea)
- 12. Database Construction for Information of Fungal Identification** Page 21
Kyung-Sook Bae, Hyung-Seon Park and Bu-Young Ahn (Republic of Korea)
- 13. Factual Database of the Korean Coastal Fish** Page 22
Tae-Won Lee, Hak-Bin Hwang, Sang-Woo Doo and Hyung-Seon Park (Republic of Korea)

Theme: Innovative Web Design and Applications

- 14. Interoperability Approach in Designing a Geo-Data Server for Antarctic Data** Page 22/24
O. Salvetti, L. Fortunati, A. Galligani, S. Biagioni and C. Carlesi (Italy)
- 15. A Web Design for Non Destructive Testing** Page 25/26
E. Bozzi, R. Bozzi, M. Chimenti, M. Martinelli and O. Salvetti (Italy)

POSTER 13

17th International CODATA Conference

Symposium II : "Data, Information and Knowledge in Biodiversity and the Life and Medical Sciences"

Factual Database of the Korean Costal Fish

Tae-Won Lee, Hak-Bin Hwang, Sang-Woo Doo and Hyung-Seon Park

Department of Oceanography, Chungnam National University, Taejeon, 305-764 Republic of Korea

Email addresses of co-authors: twlee@hanbat.chungnam.ac.kr, seonpark@kordic.re.kr

The spatio-temporal distribution of coastal fish in Korea is in service by Internet (<http://ricos.chungnam.ac.kr/~kocofish>). We used the published data in the scientific journals and technical reports. The input data contained the sampling time and location, the number of individuals and weight of each species, and their resource. The scientific name of fish was followed to the recently revised checklist of Korean fishes. The database was constructed by the Star-schema method.

This Database serves the information on 1) species compositions of a selected area on the map, 2) the morphology and geographic distribution of a fish not only by writing a scientific and/or Korean name but also selecting a photograph. The data of species composition can be seen on the screen, and downloaded by a file. It serves the detailed taxonomy, morphology, ecology and commercial importance of major fishes for non-scientists. This particular section reviewed by the specialist of that species. The data on the other marine organisms such as fish larvae and plankton are under updating.

POSTER 14

17th International CODATA Conference

Session: Theme I-6 "Innovative Web Design and Applications"

Interoperability Approach in Designing a Geo-Data Server for Antarctic Data

L. Fortunati, A. Galligani, S. Biagioni, C. Carlesi, O. Salvetti,

Institute for Information Processing, CNR (IEI-CNR), Via Alfieri 1, I-56010 Ghezzano (Italy)

Email addresses of co-authors: s.biagioni@iei.pi.cnr.it, c.carlesi@iei.pi.cnr.it, a.galligani@iei.pi.cnr.it,

o.salvetti@iei.pi.cnr.it, luciano.fortunati@cnuce.cnr.it

Within the frame of the Italian Programme of Research in Antarctica, a main goal has been to design and implement a new system suitable to manage and diffuse scientific data and information concerning the Italian expeditions.

This system implements a Geo-Data Server (GDS) having the following goals:

- To allow the multi-disciplinary analysis of the data collected within the Italian campaigns in Antarctica and of the subsequent elaboration carried out.

- To dispose of consultation and help tool having a specific functionality for an integrated use of the data provided by the different research groups.
- To allow data integration on spatial basis.
- To define a reference data-model usable and extensible for local GIS needs
- To activate a network geographic data server based on existing network facilities (Internet)
- To adopt a standard cartographic base (area of interest, scales, themes, ...)

In particular, the GDS is able to provide:

- Remote access to all the information
- The possibility to perform comparative and interdisciplinary search
- Compatibility with international standards
- Efficient organisation of the data and the operational flows
- Homogeneous user-friendly interfaces

All data in GDS are collected from several Data Centres, distributed all over the Italian country, which are data providers and users only. Data management and organisation are an exclusive task of GDS. What's stored in GDS are exclusively *consolidated data* that can be directly downloaded from the system without long and complex authorisation procedures. All data and their descriptions are stored in a unique centralised system, the GDS Archive; GDS provides a unique interface for searching and accessing all available data.

All data are inserted in the internal GIS component after an integration phase consisting mainly of adopting: a common geographic reference system, a homogeneous data model, the definition of metadata and creation of a data catalog.

With these characteristics the data availability can be enquired on geographical area and on a predefined set of attributes. This operation can take advantage of the use of visual tools for geographical-like data or of a set of attributes thesauri. This provides the user with a better way to get the query that it has in mind.

The Geo-Data Server is made of two interacting parts:

- GIS-Host, for data processing and accessing
- Disco-Server, for metadata catalog management and classification and for discovery tools activation.

GDS has two different kinds of user functionality: the possibility to search the datasets within the catalog and the capability to perform complex queries.

The Disco-Server component of the GDS performs the user-system interfacing. The user communicates with GDS by means of a Web engine, involving exclusively the Disco-Server without any initial contribution of the GIS and its database: in this sense, the metadata organisation can be optimised to obtain more efficient responses from the global system.

The GIS-Host component of GDS can perform a set of operations, like for instance the change of projection or the extraction from the dataset of a subset of data (in terms of geographic extension and set of attributes).

The creation of the archive of data involves aspects regarding the standardisation of the data from two points of view: Metadata and Data Exchange. The adopted solution has been selected after a study to evaluate the state-of-the-art in this field. In particular, to maintain the maximum compatibility with the older Italian Antarctic systems and with other

GIS systems and directories, like the Global Change Master Directory and the Antarctic Master Directory, the D.I.F. (a very simple US metadata standard used by CEOS IDN) and CEN/TC 287 (the European standard compatible with ISO/TC 211, still in progress) have been chosen.

About Data Exchange, waiting for SCAR directives, the choice is to make use of several proprietary standards (initially E00, DXF). In this way, the implementation of the system proceeds without having a degraded environment. In fact, the user data input requirements can be solved simply adding to the system all the needed data formats.

At present, a simulation prototype is under construction, composed of a UNIX workstation and three high-performance PCs networked, where the data managed are supplied by two Data Centres of South Pole System for Antarctic Data Exchange ('GEO' Centre, ENEA Casaccia, for remote sensing data, and 'TER' Centre, Dept. of Earth Science, University of Siena, for cartographic data).

In particular, the adopted solutions to implement our GDS system for Antarctic Data are:

Standards:

- Metadata: CEN/TC 287 that will migrate to ISO/TC 211 (adopted by SCAR)
- Data exchange: several proprietary standards (initially E00, DXF); waiting for SCAR directives.

System Architecture:

- Two separate systems for Data and Metadata
- Scalable components configuration
- Use of commercial products (for hardware and software)

User Interface:

- Data query: graphical (geographical) and textual (alphanumeric)
- Data restitution: graphical (geographical) and textual (alphanumeric)

In this paper, the first results of the approach followed are shown.

Acknowledgements

This work has been supported by the Project 'GIS and Databanks' promoted by ENEA within the National Programme of Research in Antarctica.
