Proposal for a Paper Presentation
for the track «Environmental Communication»
at the EnviroInfo Vienna 2002

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Web-based Environmental Information System (EIS) for Integrating and Visualizing Water Quality Data

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Problem Description

The Århus Convention demands that every country must guarantee the rights of access to information in environmental matters. The information should be made available in a transparent way and at reasonable charges.

A web-based interface could offer this 24 hours/day to the public in an inexpensive way modern enough for this century. As a universal interface to services the Web could offer many potential benefits to providers of information and to the users.

There are already a few solutions in this area, but most don't fully exploit today's possibilities and still work mainly with tabular display of numerical data. These presentations may be appropriate for the expert, but they overwhelm the general public, an ‹easier› presentation is needed.

Proposed Solution: a web-based EIS

The project deals with various aspects:

- gathering of distributed and heterogeneous data,
- data-mining for the vast underlying data,
- communication with the Geographic Information System (GIS),
- presenting the found data to the user in an easy understandable way.

The proposed paper will focus on the last facet: human-computer interaction.

A prototype is being developed this year and will be presented at the conference.

The project investigates – for the element water – the aggregation of data and its visualization through a web-based interface. As the system is providing the data to a web browser, it is platform-independent for the client. Target audiences are the governmental offices themselves and the interested citizens.

The interface is highly customizable: The user can aggregate and compare various pollution and health data, compare historical data and compare regions. It is designed to allow the user to interactively generate aggregated data.

The underlying data warehouse provides the requested data which is processed through a chartist module and presented in a graphical manner to the client.

The system is not constrained to water data; it will expandable, allowing to integrate other state of elements of the environment (air, atmosphere, soil) and various factors (substances, energy, noise, radiation).

Relevance of subject for EnviroInfo conference

This proposed paper would fit into the track «Environmental Communication».

Literature

All articles are taken from L. M. Hilty, P. W. Gilgen: 15th International Symposium Informatics for Environmental Protection, Zurich 2001:

H. Kleindienst, T. Klingl, H. Krapf: Public access to environmental information, p. 255-263

G. Knetsch: Integrating environmental data across disciplines against the background of the Århus Convention, p. 265-270

http://www.elbis.de

J. Pecar-Ilic, I. Ruzic: Dynamic Web Application for Temporal and Spatial Presentation of Environmental Data, p. 431-436

I. Seder, R. Weinkauf, T. Schülert: Verfügbarkeit und Performance des Web-basierten UIS für kommunale Verwaltungen und Bürger, p. 909-914

M. Cocks, D. Keats, R. Knight, P. Saravanakumar: Internet solutions for integrating and visualizing environmental information, p. 979-986

http://www.ctg.albany.edu/projects/inettb/ittvalue.html