

# 1 DEVELOPMENT OF SHARED ENVIRONMENTAL INFORMATION SYSTEM

## 1.1 Introduction

The **main objective** of the Shared Environmental Information System (SEIS) is to **make environmental information available for decision – makers** (focus on **Slovak Environmental Inspectorate** - SEI and the **Ministry of Environment** - MoE), to improve existing dataflows and establish new ones, where needed, and to thus make day-to-day working more effective. One basic step of development was to assess who needs what kind of information, to integrate separate parts and to provide access to the system.

## 1.2 Kick-off workshop

On November 9 -11 2004 a **Workshop** was held at SEA in Banská Bystrica. The purpose of the Workshop was to kick off activities related to the creation of a **Shared Environmental Information System**.

The goal of the workshop was to find out the range of possibilities (on a technical, institutional and political level) concerning the establishment of a SEIS, to find out special interests of different groups, to provide a basis for decision-makers within the process, create an atmosphere of cooperation and establish a strong commitment for the process.

After a series of discussions, the following conclusions were reached:

The **main aim** of the Shared Environmental Information System (SEIS) is to **make environmental information available for decision – makers** (focus on **SEI** and the **Ministry of Environment** - MoE), to improve existing dataflows and establish new ones, where needed, and to thus make day-to-day working more effective.

It was decided that this **information system** will be **developed and operated at SEA** in co-operation with Austrian Federal Environmental Agency and sectoral institutions under the MoE: Slovak Hydrometeorological Institute and State Nature Conservancy of SR.

The institutions involved in SEIS can be depicted as follows (the dark grey box indicating the first phase, the white one a possible later extension):

## For SEIS:

### Principal users:

- SEI, MoE

### Users:

- SHMI, SEA, SNC

### Principal env. information providers:

- SHMI, SEA, SNC

### Information providers:

- SEI, MoE

- Regional and District Environmental Offices, ...

- ...

- WRI, SWMC, SO of SR, ...

- Regional and District Environmental Offices, ...

As a first step **data providers** were **identified** as well as **existing data flows** between institutions. Next step was to propose **tailor-made data sets** for decision makers at SEI and MoE and to define **data access rights** for each institution.

Sectoral experts from SEA presented **existing dataflows** in the areas of water, waste, air and nature. Mr. Virgovič then presented a **data model for national reporting**, spoke about the planned database of EU reporting obligations for environment addressed to SR, **metainformation** about reporting data and the planned reporting interface.

On the second day work was focused on brainstorming about the information/data needs of the principal users of SEIS, i.e. SEI and the MoE and of the principal users, namely SHMI, SEA and SNC.

Thursday's session was dedicated only to internal staff of SEA. The purpose was to explain the **framework of existing databases/applications** in which SEIS would be created, and to collect first ideas on the **technical implementation** of the system.

At the end of the workshop an agreement on next steps was reached. Based on the information gathered during the workshop, following the workshop a series of sectoral workshops were conducted to determine further information/data needs of both decision-makers and data providers:

<b>Sector</b>	<b>Participants</b>
Air	SEA, SEI, SHMI
Water	SEA, SEI, SHMI
Waste	SEA, SEI
Nature	SEA, SEI, SNC

### 1.3 Sectoral meetings

Work on development of SEIS was continued through a series of **sectoral workshops** (see meeting schedule below) with the aim of identifying which decision-makers need what kind of information and how to integrate separate existing parts.

Sector	Date	Participants
<b>Air</b>	10th January 2005	Mr. Ronchetti, Mr. Burda – <b>SHMI</b> Mr. Murajda – <b>SEI</b> Mr. Škorňa, Ms. Košková – <b>SEA</b> Ms. Stärk (RTA), Ms. Rízová
<b>Water</b>	20th Jan. 2005	Mr. Schabjuk, Ms. Rybárová – <b>SEI</b> Mr. Chriastel – <b>SHMI</b> Ms. Košková – <b>SEA</b> Ms. Stärk, Ms. Rízova
<b>Nature</b>	26th Jan. 2005	Ms. Dobrovodska, Ms. Kromerová – <b>SEI</b> Mr. Saxa, Ms. Vavrová, Mr. Faško – <b>SNC</b> Ms. Košková – <b>SEA</b> Ms. Stärk, Ms. Rízová
<b>Waste</b>	31st Jan. 2005	Mr. Slosiarik – <b>SEI</b> Mr. Jancarik, Mr. Soldan – <b>COHEM SEA</b> Ms. Guštafíková, Ms. Košková – <b>SEA</b> Ms Rízová

All meetings were held at SEA in Banska Bystrica. Overall, it can be said that among the main users of the system (SEI) and the main data providers a **positive attitude** towards SEIS prevailed. The meetings were perceived as a **forum** for both data providers and users **to exchange ideas** and **express** their (data) **needs** and expectations. This opportunity was taken up gladly by all participants and as a result, the overall **awareness of existing databases increased**.

In the beginning, it was clarified that SEIS was not intended to replace any existing databases, but that **data** would be **replicated to the shared environmental information system**, which would also serve as a **data warehouse**.

There was a general **readiness** of data providers (SHMI, SNC and SEA) **to make** existing **data available** for inclusion into SEIS.

Attention was drawn to **difficulties** arising from the use of non-verified raw data. Another concern was the **confidentiality** of certain data, which was solved by issuing different access rights to user groups.

The workshop participants repeatedly pointed out the **need** for official interinstitutional agreements on **data exchange**, be it in the form of memoranda of understanding, or other.

It was assumed that for the first pilot version of SEIS **the data needs of the Ministry of Environment** are the **same as the ones expressed by SEI** in the course of the sectoral workshops.

An overview of the **data needs identified for SEIS** is shown in the following table:

SEIS	Data Needed for Decision making (and thus to be included in SEIS)	Data availability										
		Dataflow (existing / new)	WHO	Additional Organisations	which data	format in which data are provided	Type of database / link	External Administrator of the existing database	Validation of the Data	comments	Access Rights	Update
	SEI											
Cross-sectoral	Databases of valid decisions from District and Regional Environmental Authorities	new	Environmental Regional and District Offices		all	word files, excel sheets...	not real databases, local folders in offices			It emerged that it would be very useful to collate all decisions to the central database at SEA (there is some database of decisions for water and waste sector, for air sector there is database covering big and medium-sited polluters; for nature - there is IS in preparation of SEA - planned also database of decisions)		consult planned updating of database of decisions with Environmental Regional and District Offices
	Overview of all specific environmental valid legislation and proposals (e.g. ISO standards...)	new	MoE		all	www page of MoE Overview on the MoE www page - link - all directives and norms - not complete nor updated	<a href="http://www.enviro.gov.sk/minis/">http://www.enviro.gov.sk/minis/</a>	-	-	Updated versions of all valid directives and decrees for all sectors, it can be used also link on <a href="http://www.zbierka.sk">http://www.zbierka.sk</a>	Currently it is public on www page of MoE, and will be also in future - there will be link with SEIS	immediately in case of changes in the law
AIR Sector												
	Up-to-date data on air quality monitoring - air pollution data (Imisie)		SHMI		all	Internet application and sent via email	MS SQL	Private company - Define	validation of the data - warning that data are not validated and can be changed	data also needed for IPPC IS - EPER	definition of access rights - only for institutions, not for the public	ad hoc; daily, in the case of accidents
	Data from National Registry on Emission Information (NEIS)	new	SHMI		all	Internet application	MS SQL	Private company - Spirit	validation of the data - warning that data are not after validation and can be changed	replication of NEIS database to SEA - oracle database - which will be physically at SEA	definition of access rights - only for institutions, not for the public	once a year
WATER Sector												
	Quality and quantity of groundwater	new	SHMI,	SWME - River Basin Management, WRI(VUVH)	all	programming environment - MAGIC, possible export to dbf, txt		SEIS developers to consult with private administrator	Data on quantity - continuously, Data on quality - once a year - there is automatic update system (data for previous year)	same request from SNC		
	Quality and quantity of surface waters	new	SHMI,	SWME - River Basins Management, WRI(VUVH)	all	ingres, possible export to dbf		SEIS developers to consult with private administrator				
	Hydrological maps	new		WRI(VUVH), State Health Institute, SWME	all							
	Database of drinking water	new			all							
	Consumption of groundwater sources - taking samples	new	SHMI		all	to find out - see comment				responsible: Mr. Kulman		
	IS general water register (Súhmná evidencia o vodách) - special interest on amount of waste water	new	SHMI		all	to find out - see comment				responsible: Ms. Ďurkovicova		
	Drain water	new		SWME(SVP)	all							
	Permits on discharging of waste water	new		Environmental Regional and District Offices	all					a part of IS general water register		
	Permits on consumption of groundwater	new		Environmental Regional and District Offices	all							

WASTE Sector												
	Data on decisions made by District offices of Environment	new		Environmental Regional and District Offices	valid decisions	paper or electronic form			regularly	there is co-operation with some of the offices - it differs from office to office – some are willing to provide SEI with information some are not + data from Business register		in appointed period of time
	data on decisions made by higher level institutions: MoE	new		MoE	valid decisions	paper or electronic form			regularly	no co-operation, e.g.: dangerous waste, export/import of waste		in appointed period of time
	data from analytical analyses from SEA laboratories	new		SEA - COHEM	all					SEA don't have data on analyses at the moment in any IS (but if some new additional system is created, they can provide SEI with this information)		
	list of accredited laboratories	new		SEA - COHEM	list of accredited laboratories	electronical list			in the event of some change	as part of RISO database is accessible for SEI		
	information about registration of individual subjects active in the area of waste	new		Regional authorities	all							
	list of subjects active in waste management area			Environmental Regional and District Offices	who runs what, what kind of equipment/facilities they have					it is a part of RISO database for SEI		
	database of landfills	new		SEA - COHEM	location + basic information, decision of responsible authority					as part of RISO database is accessible for SEI - necessary to complete database		
	"reports on waste" (announcements about the origin of waste and handling with waste) delivered to Environmental Regional and District Offices	new		SEA - COHEM	Environmental Regional and District Offices	all				as part of RISO database is accessible for SEI, producers of waste deliver reports once a year to Offices - it is useful overview about waste production for SEI, agreement on sending of reports from Environmental offices to SEA needed (RISO administrator) currently it is on the basis of verbal agreements		yearly by all producers/collectors of waste
NATURE Sector												
	Map layers	new		SNC, SEA	Database of especially protected areas of Slovakia	Web application	Oracle			borders of protected areas + basic information		
	Map layers	new		SNC, SEA	Division of SR into regions and districts	Web application	Oracle					
	Map layers	new		SNC, SEA	Layer of soil use (agriculture, forest...)	Web application	Oracle					
	Ortophotomaps	new		SEA	whole Slovakia					problem with copyright (SEA, SNC do not have copyright and cannot manipulate it) - it is not possible to produce it in IS or WWW environment, but SEI have been supplied with a licence of these Ortophotomaps		
	List of zoological and botanic species - IS of taxons and biotopes	new		SNC	List of all zoological and botanic species	MySQL-PHP-WWW application				Consult with Ms. Brodianska if it is possible		
	Natura 2000 - information about Natura areas divided into ground-plots	new		SNC	Spreading of the Natura areas on ground-plots and what level of protection is there in it - number of ground-plot + part (if Natura area is on two ground-plots), text information	.doc, access (maybe)						
Data requested from SEI												
	Database on sanction decisions											
	Update of data from data providers											
	Database of accidents, complaints, executed controls/checks											

One of the main requests voiced by all main players (SEI, SHMI, SNC and SEA) concerned the data on **decisions of the Regional and District Offices of Environment**. Data exchange is only based on verbal agreement.

In general, a **modular approach** has been taken toward the development of SEIS.

**1.4 User groups and access rights**

In the beginning, it was clarified that SEIS was not intended to replace any existing databases, but that **data would be replicated to the shared environmental information system**, which would also serve as a **data warehouse**.

To propose tailor-made datasets, as foreseen in the covenant (Benchmark C13) has become redundant, since very early on in the project the project partners had come to the conclusion that it was more efficient to **replicate existing databases** to one central database, and to **define user groups** and respective **access rights**:

Organisation	Administrator	User	Data Provider	Access Rights
SEA	Yes	User	Principal Data Provider	Administrating access rights
SEI	No	Principal User	Data Provider	Full access rights
MoE	No	Principal User	Data Provider	Full access rights
SHMI	No	User	Principal Data Provider	Respective access rights
SNC	No	User	Principal Data Provider	Respective access rights

Users **access** the SEIS through the **internet environment**. Users just need a personal computer with a browser (for example: MS Explorer) and sufficient internet connection. The **functionality** of the SEIS is realised on the servers of SEA. A system of **authorization and authentication** is assured on the basis of access rights of individual user groups. A shared information system reflects different access (extent) of individual user groups to different data; this means different interfaces, different access rights, different extent of using and sharing data, if necessary. Differentiated access rights also alleviate the concern raised about the **confidentiality** of certain data.

**1.5 System architecture used at SEA**

Development of the Shared Environmental Information System was planned in line with the environment of existing information systems built at SEA in **the frame of conception of information systems** in the section of Ministry of Environment. For the development of SEIS existing databases provided by different data providers have been used. Possibility of **interconnection** of databases was assured.

SEIS application was developed by means of technologies and procedures that are used at SEA to build information systems and were compatible with **hardware and software architecture of SEA**.

The following table shows the developing environment and tools used at SEA. Information systems are nowadays developed as **distributed information systems** (distributed database applications). At present two types of applications are used at SEA:

<b>WIN 32 GUI database client</b>	<u>Used technologies:</u> Borland DataSnap, Socket connection (COM/COM+, TCP IP port) Web connection (COM/COM+, HTTP, HTTPS)
<b>HTML database client</b>	<u>Used technologies:</u> IntraWeb application developing environment, Delphi, HTML, CSS

## 1.6 Description of Shared Environmental Information System

Being an effective tool for sharing environmental information, the Shared Environmental Information System (SEIS) supports the decision-making process in the environmental sector. Shared environmental IS serves for browsing data in the area of environmental protection in 4 main **areas - modules** and so: **air, water, waste and nature protection**. IS serves for effective browsing a sorting of text, numeric, graphic or other data.

### 1.6.1 Basic functionalities of the SEIS

IS ensures the following functions:

**A. Browsing data** – browsing of text, numeric, graphic or other data.

**B. Creation of the time series and sequences** - possibility to create dynamic graphs.

**C. Browsing of geographical data -**

- It is possible to show geographical data with the standard functionality, Arc IMS technology enables. System enables the following functions: dynamic displaying of the maps – zoom tool (zoom in, zoom out), shifting the map, displaying the previous view, showing the active (visible) layer, showing the whole view, measuring the distance on the map, displaying in the map scale etc;
- Work with the map layers: switching off, switching on, adding, removing of layers, changing the layer order and so on;
- „Requesting“about attributes of the individual map layers - functions: identify, query.

**D. Creation of the overviews and selections** – user has a possibility to create overviews and selections from the data on the basis of defined selection criteria.

**E. Printing overviews and selections** - user has the possibility to print individually created overviews and selections.

**F. Export of data into agreed formats** – possibility to export selected data into agreed formats (for example. xml, pdf, doc, rtf, xls, dbf).

**G. Administration of access rights** – system administrator is able to match users into user groups (for example staff of the Ministry of Environment, Slovak Environmental Inspection, SHMI, SNC, SEA, administrator, all users etc.). One user can be involved in more users groups. There is a possibility to give created groups the access rights to actions for the work with individual data.

**H. Fulltext search of data in source databases** – effective searching tool, which enables fulltext search in databases.

**I. Data updating** – authorised persons have the possibility to add and update information.

### **1.6.2 Users and data providers:**

Basic users groups are:

- Main user: SEI, Ministry of Environment of the Slovak Republic (MoE)
- User: SHMI, SNC
- Administrator: SEA

Basic groups of data providers are:

- Main data provider: SEA, SHMI, SNC
- Data provider: MoE, SEI

### **1.6.3 Contributions of the system for organisation and its employees:**

Main users SEI, MoE can use this system in performing of their competencies as an information support in day – to – day work, while they have access to all data in their area of activity. Users: SHMI and SNC use this IS as a complementary source of information and because they are at the same time also main data providers, they use IS also as a feedback from the side of main users. Data providers provide requested data regularly and in given format to the IS administrator.

This system is not intended for the use of public.

### **1.6.4 Technical draft for solution**

#### **1.6.4.1 Technical requirements**

Development of the SEIS was planned at SEA in the framework of concept of the IS building in MoE resort. IS was created in the way that basic technical (hardware, software, network) and personnel capacities were shared. In the process of creation of the system, already existing databases built by individual data providers as well as existing applications were used. The possibility of mutual interconnection was ensured and the use of functionalities of existing IS built in the MoE and especially IS built at SEA, SHMI, SNC and SEI. IS was built through technologies and procedures that are used in the process of IS creation at SEA and are in compliance with hardware and software architecture of SEA.

#### **1.6.5 Solution architecture**

Internet application's requirements for scalable and save solution, easy and fast modifiability covers architecture supported by script language PHP and template system SMARTY. Architecture includes standard parts:

- Thin web client with presentation logic,
- Application logic layer,
- Data layer

#### **Data layer**

This layer, also called „back-end“ in the multi-layer model, beside data administration also realises protection of data against loss (saving), damage (consistence, conflict solution) and unauthorised access and manipulation. Due to the increase of the efficiency the database can take over some functions of the application layer, for



example: data synchronising, massive data processing– batch processing. For IS a database Oracle 9i was used.

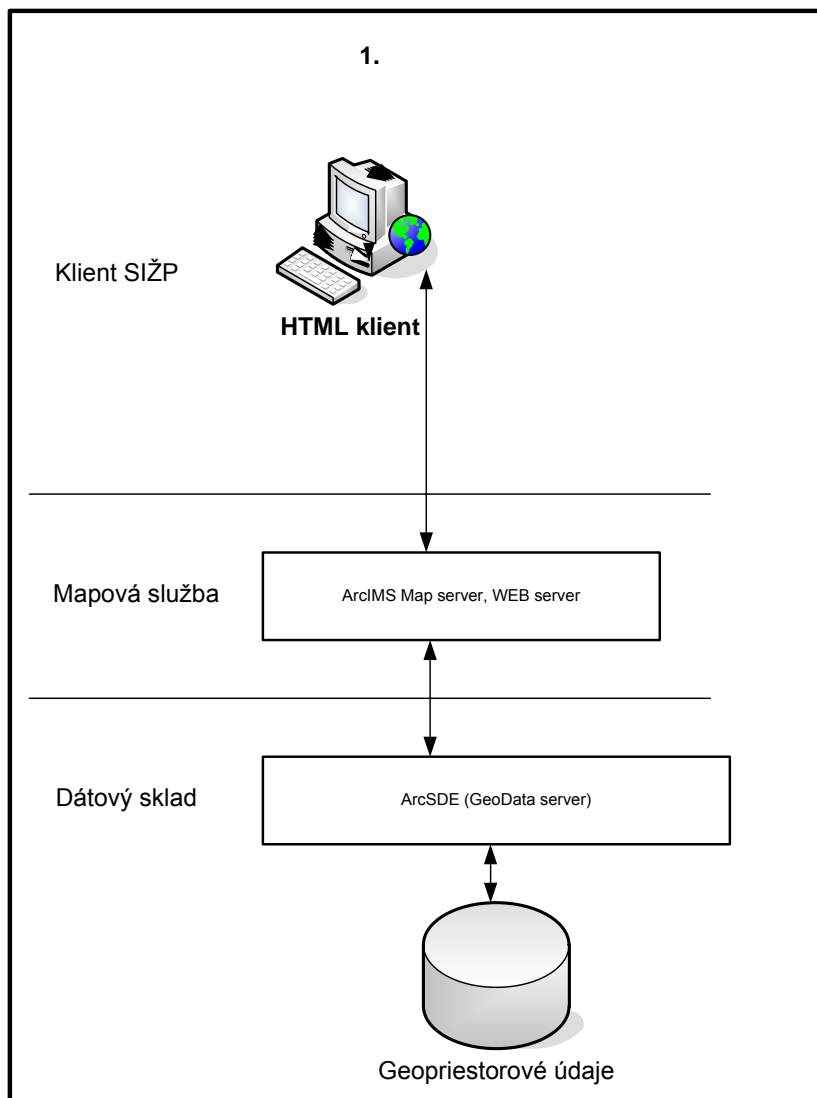
### **Application layer**

The application layer creates a part in the system, where the system functionality is implemented. Application layer provides services for connecting clients on the basis of the standard communication mechanisms (HTTP). As a basis for the application layer a WEB server APACHE Ver. 2.0.54 was used with implemented module PHP5 and with extensions: Oci8, Multibyte support, GD and Imap. Web server is operated in OS LINUX. For the communication with the database a library ADOdb is used (<http://adodb.sf.net>). A possibility to use the template system Smarty was given (<http://smarty.php.net>). Template system SMARTY enables to enter special symbols and commands into HTML code and in that way to separate application logic from data presentation.

Presentation of the graphic data:

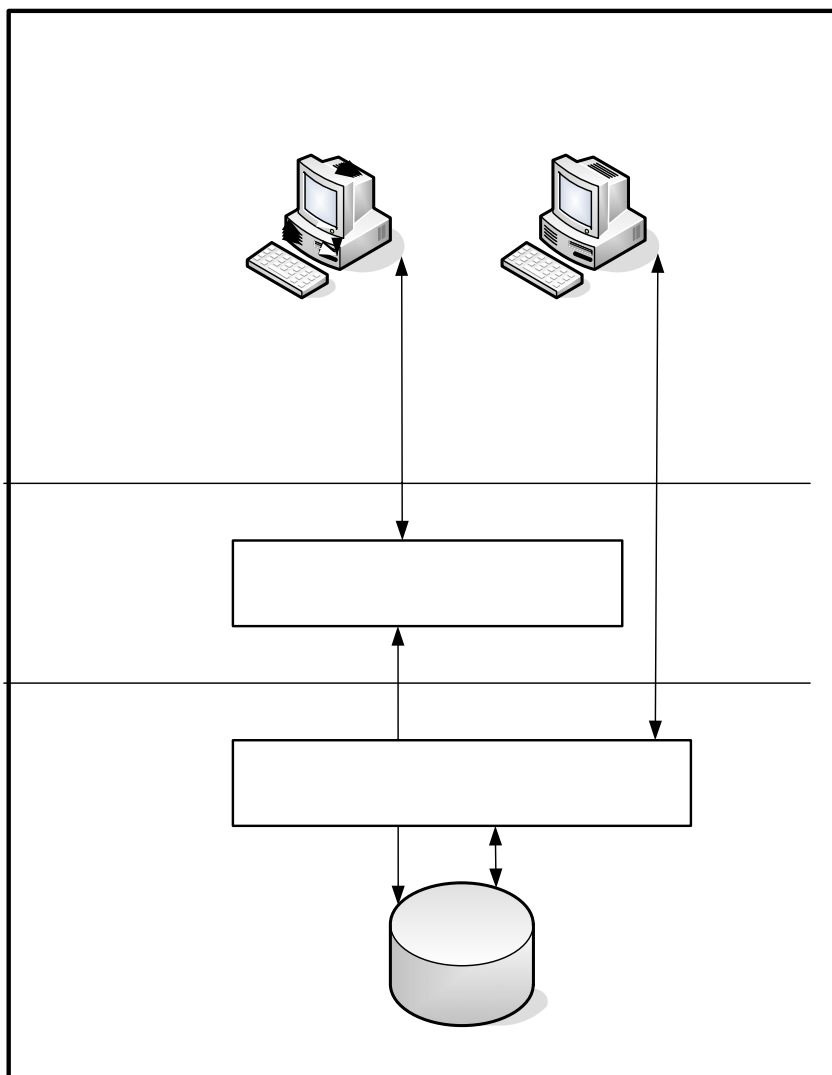
#### 1. Use of own HTML client

Created HTML map client is requesting SEA map server via ARXML language with using connector of module PHP5. The client uses direct connection through internal port of the map server. For the work with the map is used on the client's side scripts of the JavaScript language, that is adapted for the work in all basic browsers. Application layer for the processing of space and attribute data use the same system and software interface. The advantage of this solution is a possible adaptation of the application to the specific user's needs.



## 2. Use of the desktop client

One of the other possible solutions is providing the client workplaces with a so-called thick desktop client (ArcView, ArcExplorer, ArcInfo, ArcEditor). Considering existing price relations and provided functionality of such a client, ArcView was recommended as software solution. Clients then can use map services of the SEA map server. They connect themselves to these services on the basis of standard communication mechanisms (TCP/IP, HTTP) via specification of the name SDE server and the port number or WEB server name, which requests ArcIMS services. The connection is realised through JAVA servlet connector TOMCAT 4.1.xx.



### Presentation layer

## Klienti SIŽP

This layer involves interface for system users who work through the layer with the application. For the multi-layer applications the presentation layer is defined as thin, domain-independent implementation of only input – output character. It uses sources of the clients (remote) working station. Content generation as well as transformation of the input user's activities is realised by Web server, i.e. Apache. Thin web clients are used as the end nodes, free available browsers of the HTML documents (Web browsers). HTML pages are created from the sources on the web server mainly by dynamic construction (PHP) based on the client's requirements (direct URL entering, confirmation of the requirement from the previous page). For the selection of the browsers, the minimal requirement is to support HTML 4.x. Minimal screen resolution for clients' stations is 800x600 by 16-bit colour.

DESKTO  
ArcV  
ArcE  
ArcE

#### 1.6.5.1 Users' requirements

##### Operation of the application

Application is accessible and operates non- stop 24 x 7 on-line.

Language:

The solution has a Slovak language interface. At the same time it is supporting data processing in Slovak keyboard symbols and Slovak format for the time being.

Requirements regarding service and solution support  
Guarantee period for solution 2 years minimum

**This will be ensured by** a guarantee period for the solution, which is standard 2 years.

A. *After guarantee service 5 years minimum.*

**This will be ensured by** an after guarantee service which fulfils minimal requirements.

B. *Support duration during working days in working time*

**Support will be provided:** from 8.00 to 17.00 hrs.

## 1.7 SEIS development phases

SEIS development consisted of the following phases:

The **Requirement Analysis Phase** consisted of the following steps:

- Analysis of the content needs of the final users (SEI) according to the sectors
- Preparation of the workplan of activities
- Analysis of the existing applications and databases
- Analysis of other databases

The **System Analysis Phase** consisted of the following steps:

- Proposal of Entity-Relation Diagram
- Database documentation
- Creation of the physical empty schemes
- Analysis of GIS solution
- Proposal of GIS solution

The **System Proposal Phase** consisted of the following steps:

- Proposal of the graphic interface
- Adaptation of the existing databases and databases for the needs of SEIS
- GIS, ArcGIS Installations, training for the users, GIS data, map services, CGS Client
- Creation of the database application logic

The **Testing Phase** consisted of the following steps:

- Testing of application
- Fine-tuning of application
- Users comments and requirements implementation

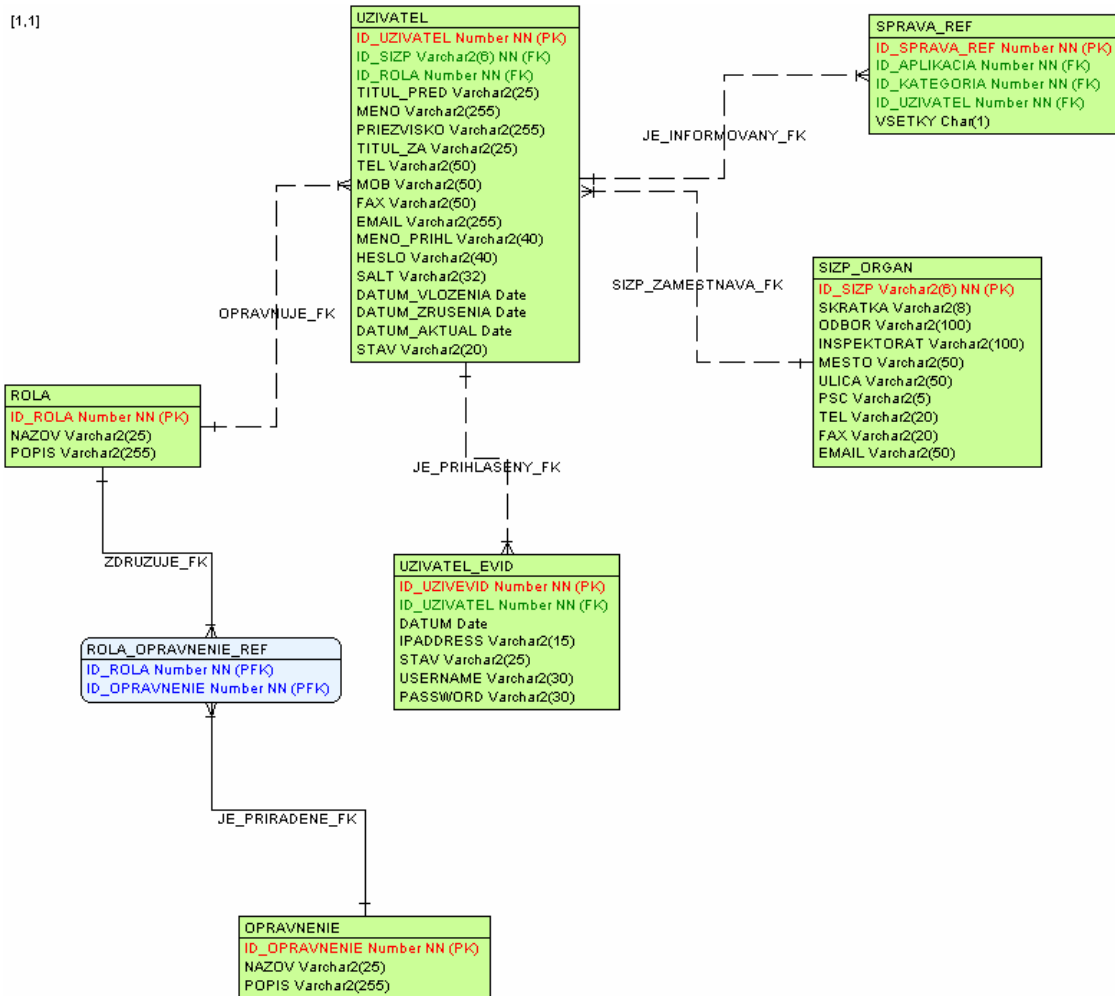
The **System installation and Operation Phase** consisted of the following steps:

- Installation

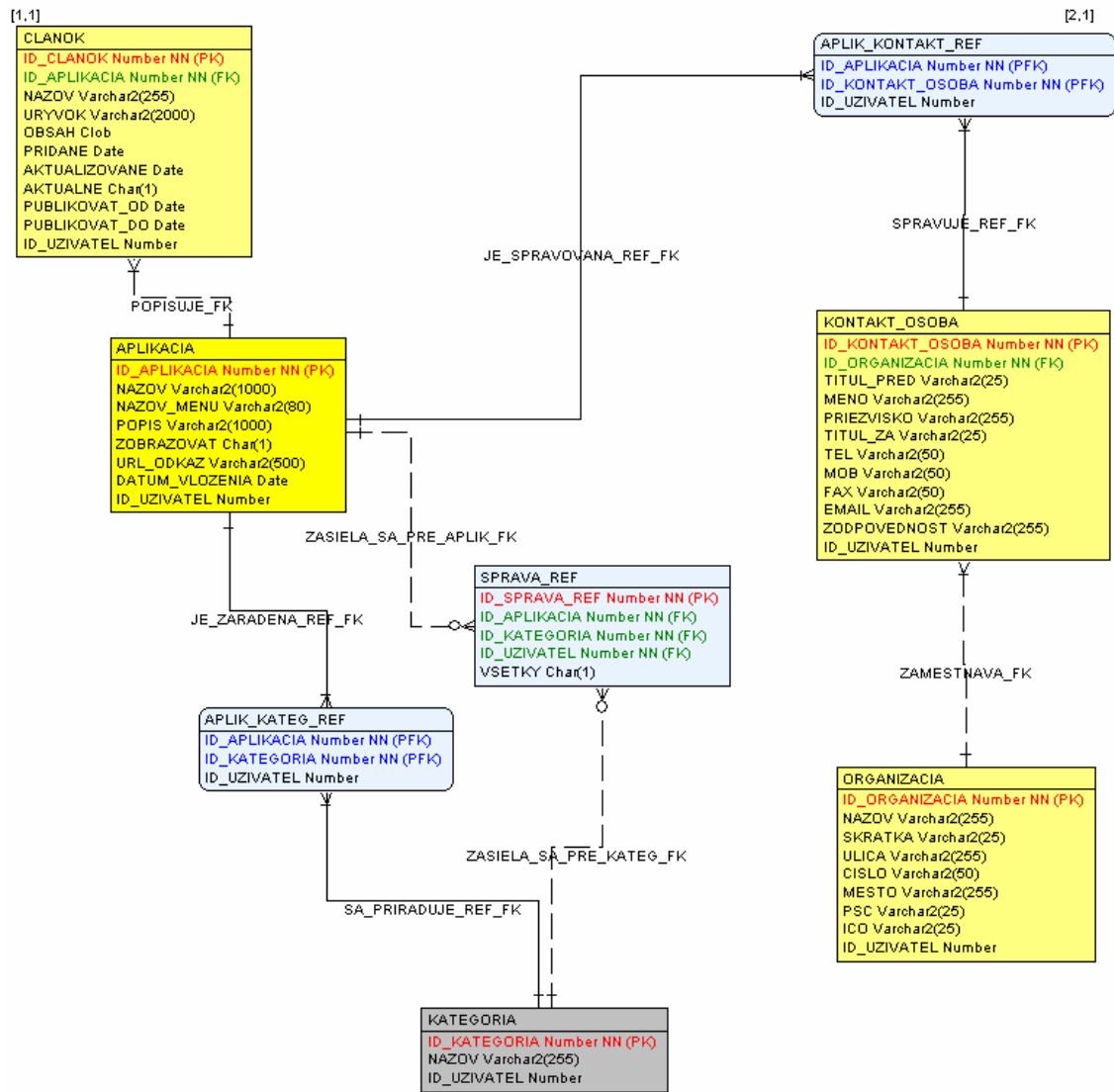
- Filling of database
- User Trainings
- Processing of User Manuals and Technical Documentation
- Administration, updating, operation

The following scheme shows the **Entity - Relation Diagrams** for the Shared Environmental Information System that has been drawn up as a first step of the **System analysis phase**:

## USER\_MODEL



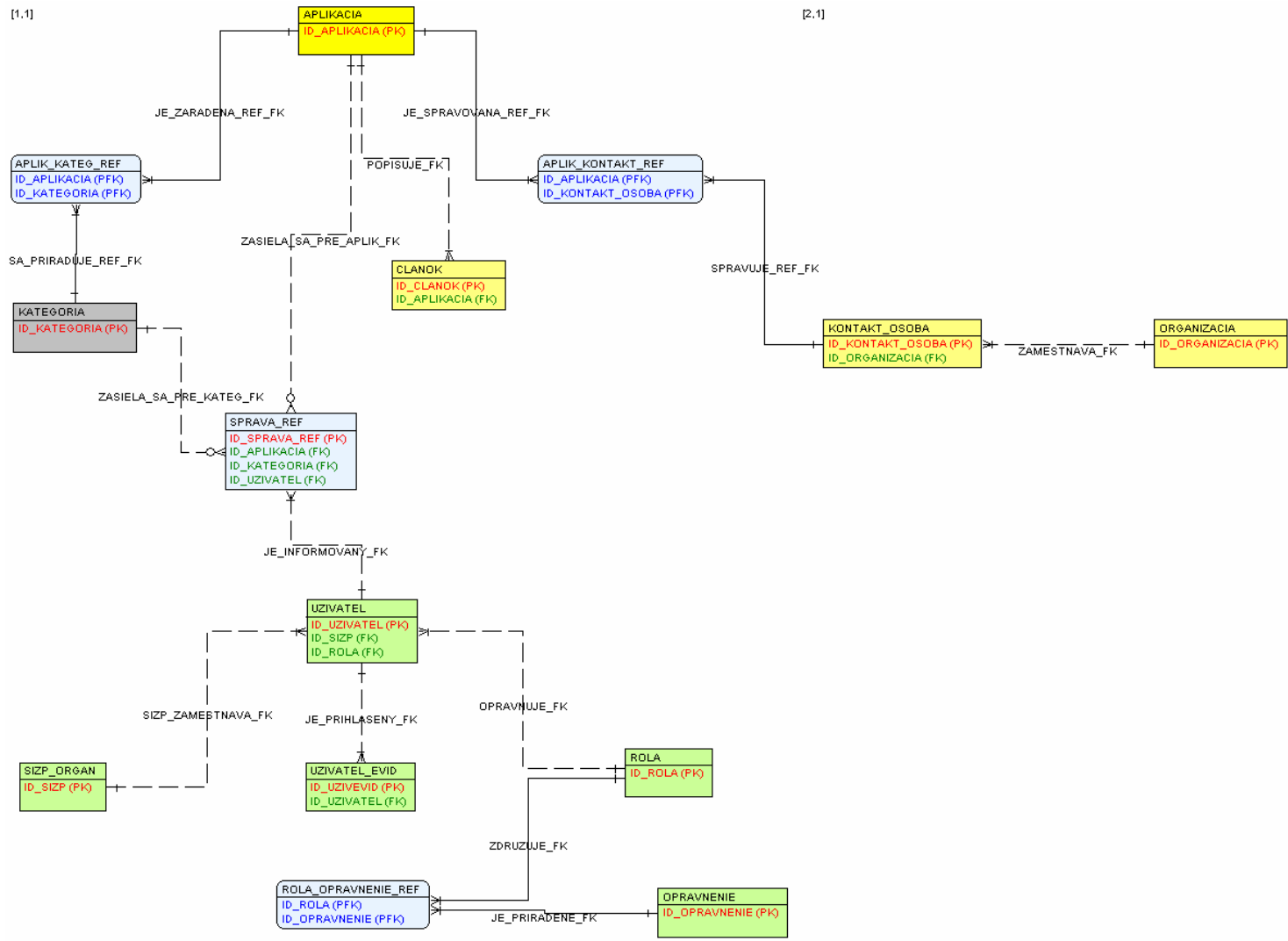
# META\_MODEL



# MODEL\_SEIS

[1,1]

[2,1]



## 1.8 GIS analysis and proposal for GIS solution – presentation of the geographical data in SEIS

A significant part of SEIS is the GIS section, i.e. access for users to geographical data. SEIS users have access to geographical data via Client **Central Geographical System** (CGS), built in co-operation of several institutions within the Ministry of Environment. At the beginning of the project, SEI was not a CGS user (client) and had no access to datasets which are provided for the CGS by individual organisations. In SEIS an **authorised access (client) for SEI** into CGS has been created and SEI inspectors have rights for browsing as well as downloading geographical data, which they can use for their daily work as map background materials.

CGS was developed because of a need of a united platform for access to digital geographical datasets. The driving force behind CGS is the Slovak Environmental Agency in close co-operation with partners from Slovak Hydrometeorological Institute, Slovak water management enterprise, State geologic institute of Dionyz Štúr, State Nature Conservancy, and Water Research Institute.

The aim of **CGS** is to **integrate heterogeneous datasets** from different organisations under the Slovak Ministry of Environment and to make them available to different user groups (with different access rights), ranging from experts to the general public.

This effective system for sharing geographical data among institutions in the Ministry of Environment SR is **used in creating SEIS**.

SEIS clients enter (within SEIS) into CGS via 3 client applications:

1. in www environment via internet browser (recommended IE 5.5+ requires support of Java scripts)
2. via free Java client Arc Explorer (20 MB)
3. Desktop ArcGIS applications.

Desktop ArcGIS applications were procured for SEI employees via public procurement for this purpose.

## 1.9 User trainings for Shared Environmental Information System and SEIS operation

At the latest phase **development** of SEIS application was successfully **completed** and the system has undergone a testing and improving stage. At present, the web application SEIS is fully operational. It is accessible for users via **common internet browser**. Users enter the application using their user name and password, which means that the application has authorised access and is fully secure.

A series of two **user trainings** has been realised during the last quarter period regarding SEIS:



Training	Place	Date	Number of Participants	Organisation
<b>SEIS user training</b>	SEA, Banská Bystrica	22nd May 2006	11	SEI
<b>GIS, CGS training</b>	SEA, Banská Bystrica	5th - 7th June 2006	6	SEI

A full-day **user training** for using information system SEIS was realised on **22<sup>nd</sup> May 2006, at SEA in Banská Bystrica** by the providing company and co-operating SEA IT expert. It was divided into two sections: a section for users and a section for administrators.

The second part of the training was a **special three-days GIS training for SEIS users**. Training was held from **5<sup>th</sup> to 7<sup>th</sup> June 2006** at SEA, organised by SEA GIS experts. It was dedicated to special training on ESRI GIS Tool ArcView and on **Central Geographical System (CGS)** that will provide spatial data for SEIS users. The Central Geographical System was presented with all possibilities of working with geographical data via 3 client applications:

1. in www environment via internet browser (recommended IE 5.5+ requires support of Java scripts)
2. via free Java client Arc Explorer (20 MB)
3. Desktop ArcGIS applications.

For this purpose, desktop ArcGIS applications were procured by public procurement for SEI employees. These applications **were installed by SEA experts** at SEI workplaces during the week when the GIS training was provided.

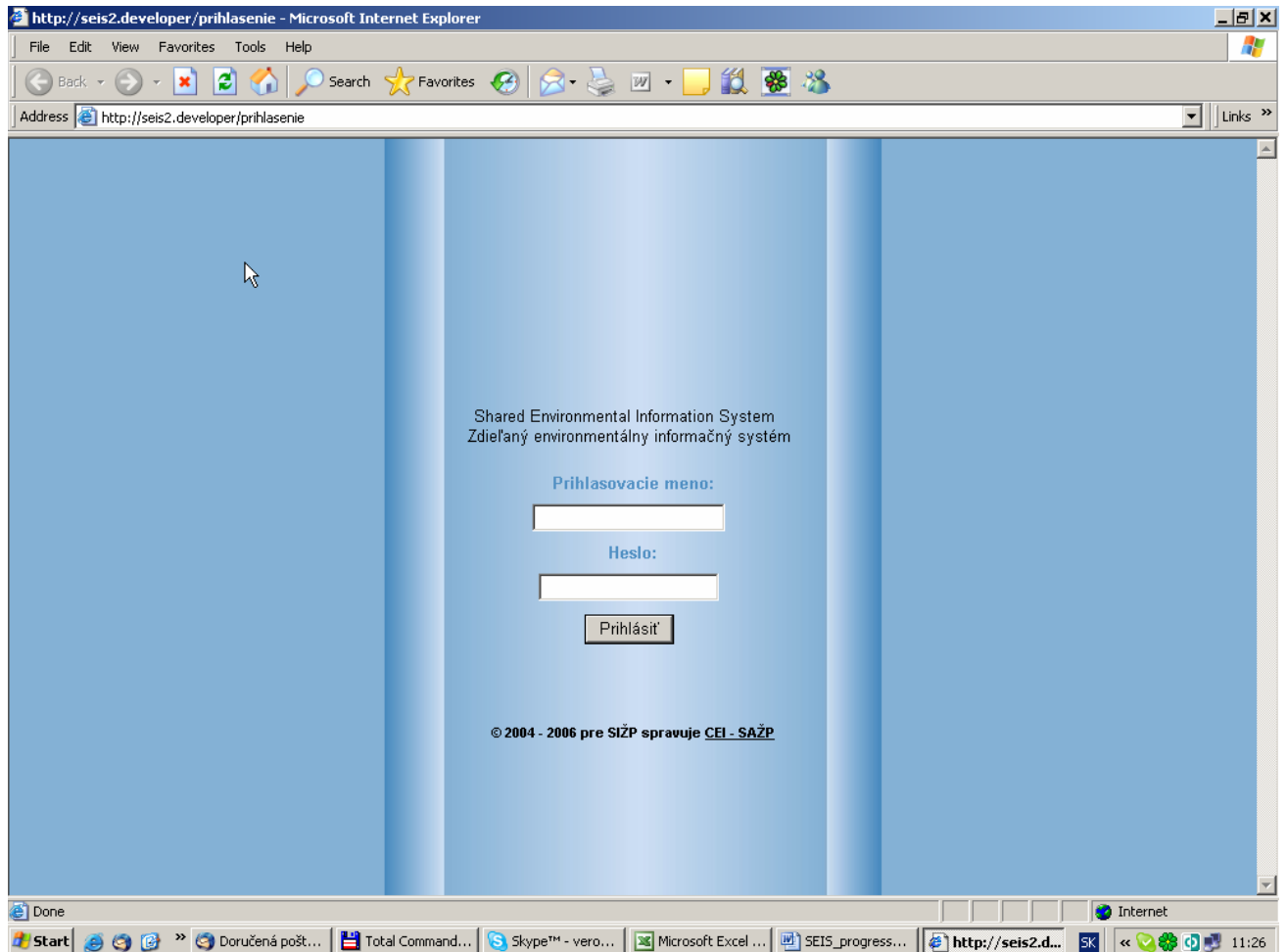
A total of 17 people received this special training. If needed, more experts will be trained in the future and also trained experts will pass on acquired knowledge to their colleagues.

SEA experts will **administrate** SEIS application on **SEA servers** and in the future could provide **necessary modification** of the information system according to users needs. The application is temporarily located on address: **<http://seis2.developer>**

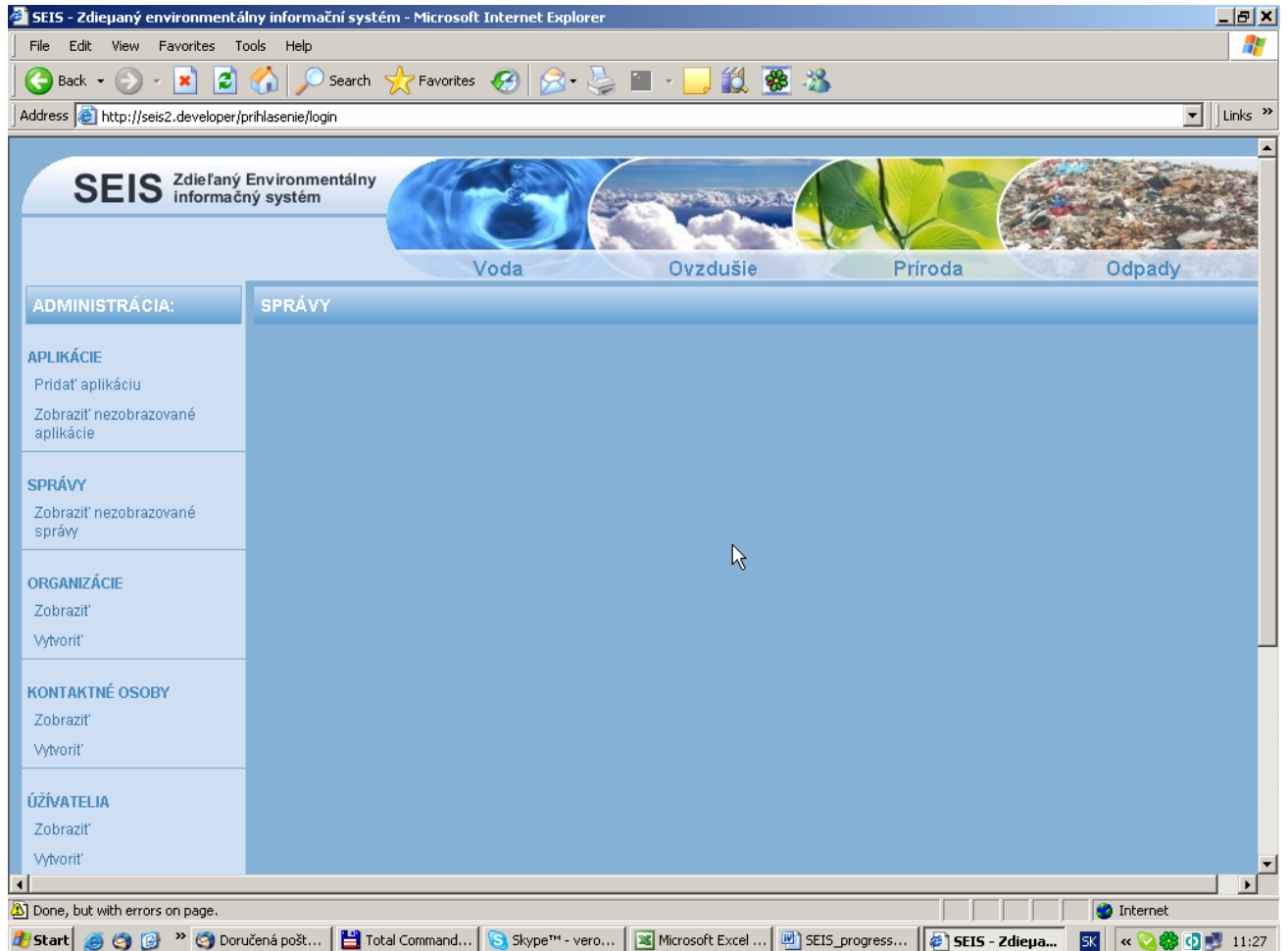
## Interface of Shared Environmental Information System

Users access SEIS via common internet browser. After entering their **user name and password** they access the application. Each user has its own user name and password that has been set by the administrator.

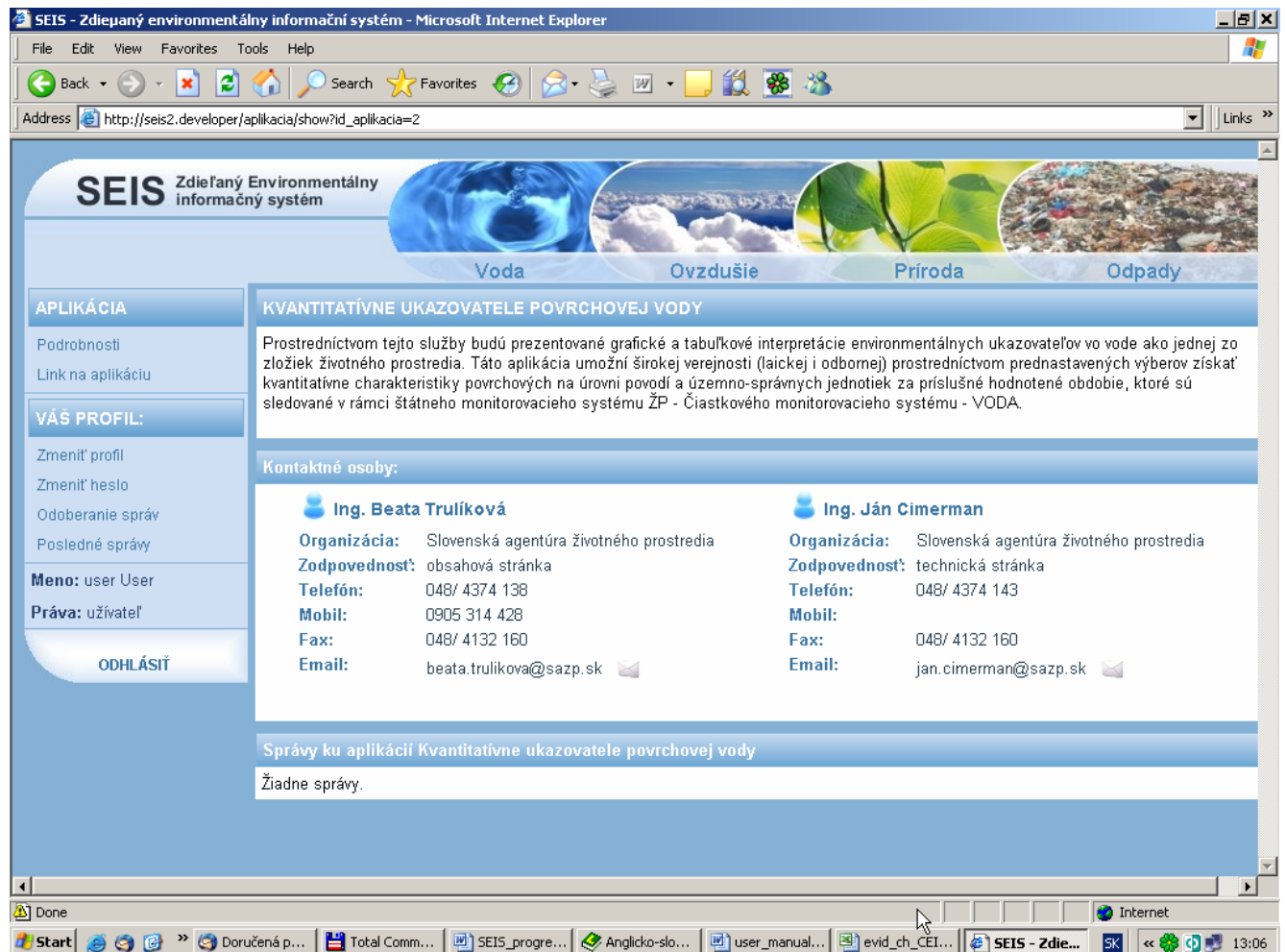
The following screenshot shows the access screen of the application.



As you can see in the following screenshot, **the main screen** is divided into 3 parts. The main menu allows orientation among metainformation on individual applications. Then there is a User's menu which allows to edit data about the user, and to determine setting regarding the reception of reports the third, the main part allowing access to all applications.



The main menu allows orientation among the applications. After clicking on an item from the menu, metainformation about this application is displayed (description, contact persons. etc). See next screenshot.



The user's menu on the left side offers the following items:

#### **Details**

After clicking details about the application are showed.

#### **Link to application**

After clicking users pass directly to the application's address. The list is divided into 3 parts. In the first part, there is a description of the application and which purpose it serves. In the second part, there is a list of contact persons, contact details and a definition of their responsibilities (content or technical part). In the third part, there are reports about application, which are classified according to dates of their edition.

#### **Change profile**

After clicking on this item, the user gets into editing of his profile.

#### **Change password**

After clicking on this item, the user can change his password.

#### **Reports receiving**

After clicking on this item, the user can set which applications he/she wants to receive reports about.

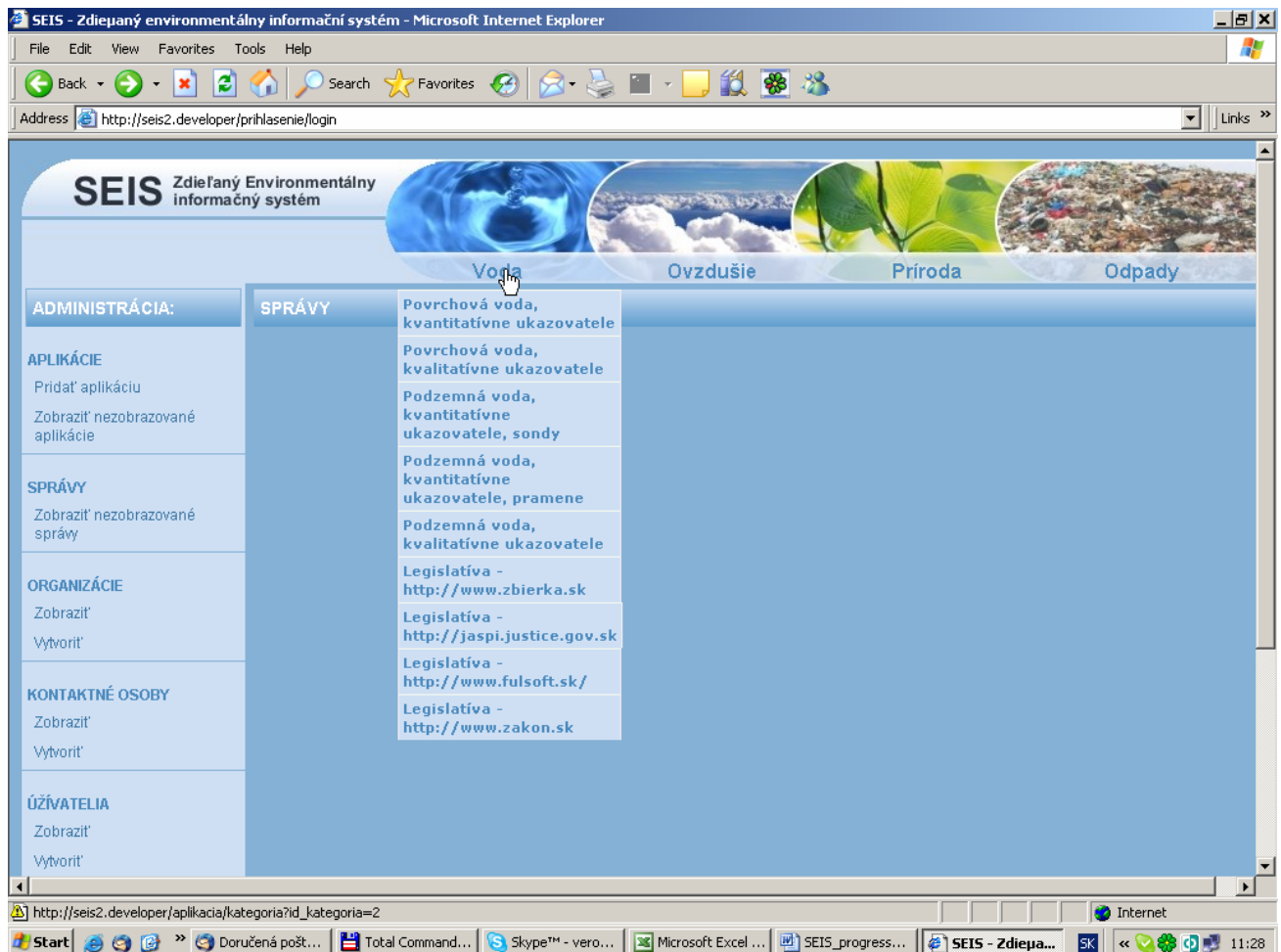
#### **Latest reports**

After clicking on this item a list of latest reports with navigation panel is being displayed.

### **Log out**

After clicking on this item you log out.

After clicking directly on the **title of the category** (for example „Water“), a list of all applications under this category is being displayed. See next screenshot:



The user can select, about which applications he/she wants to **receive reports**. The user is shown a list of applications and the applications about which the user wants to be informed are ticked automatically. If the user wants to receive reports from the whole category, click on the field with title whole category, with name of the category from which he/she wants to receive the reports. If he/she wants to receive all reports, right down there is a ticking field with title „All categories“, after selecting it, all applications are selected. For receiving the reports he/she enters the field „Enter“. If he/she did not select anything, he/she will receive no reports. See following screenshot.

SEIS - Zdieľaný environmentálny informačný systém - Microsoft Internet Explorer





File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites RSS Print Mail Print Preview

Address http://seis2.developer/spravy/list Links

## SEIS

Zdieľaný Environmentálny  
informačný systém

Voda
Ovzdušie
Príroda
Odpady

**VÁŠ PROFIL:**

Zmeniť profil

Zmeniť heslo

Odoberanie správ

Posledné správy

---

**Meno:** user User

**Práva:** užívateľ

---

ODHLÁSIŤ

**ODOBERANIE SPRÁV**

**OVZDUŠIE:** Celá kategória Ovzdušie:

- Kvalita ovzdušia - ročná
- Legislatíva - http://www.zbierka.sk
- Legislatíva - http://jaspi.justice.gov.sk
- Legislatíva - http://www.fulsoft.sk/
- NPIS
- Kvalita ovzdušia - okamžitá a za predošlý deň
- Legislatíva - http://www.zakon.sk
- EIONET
- NEIS

**VODA:** Celá kategória Voda:

- Povrchová voda, kvantitatívne ukazovatele
- Povrchová voda, kvalitatívne ukazovatele
- Podzemná voda, kvantitatívne ukazovatele, sondy
- Podzemná voda, kvantitatívne ukazovatele, pramene
- Podzemná voda, kvalitatívne ukazovatele
- Legislatíva - http://www.zbierka.sk

Done, but with errors on page. Internet

Start | Doručená p... | Total Comm... | SEIS\_progre... | Anglicko-slo... | user\_manual... | evid\_ch\_CEI... | SEIS - Zdie... | SK | 13:20

## 2 USER MANUAL

### 2.1 Main page



Picture 1

**Main page** is divided into 3 parts: **Main menu** (in red on the Picture 1) that serves for orientation among metainformation on individual applications. Then there is a **User's menu** (in green on the picture) that serves for editing data about the user and setting up of the reports receiving and the third **Main part** (displayed in yellow).

#### 2.1.1 Main Menu

Main menu serves for the **orientation among the applications**. After clicking on an item from the menu a metainformation is displayed (description, contact persons. etc) about this application. If you click directly on the title of the category (for example „Air“), a list of all applications under this category is being showed (Picture 2).

## KVALITATIVNE UKAZOVATELE POVRCHOVEJ VODY

- **Menu názov:** Povrchová voda, kvalitatívne ukazovatele
- **Popis:** Prostredníctvom tejto služby budú prezentované grafické a tabuľkové interpretácie environmentálnych ukazovateľov vo vode ako jednej zo zložiek životného prostredia. Táto aplikácia umožní širokej verejnosti (laickej i odbornej) prostredníctvom prednastavených výberov získať kvalitatívne charakteristiky povrchových vôd na úrovni povodí a územno-správnych jednotiek za príslušné hodnotené obdobie, ktoré sú sledované v rámci štátneho monitorovacieho systému ŽP - Čiastkového monitorovacieho systému - VODA.
- **Link:** [http://atlas.sazp.sk/cmsvoda/povrch\\_kvalt/index.php](http://atlas.sazp.sk/cmsvoda/povrch_kvalt/index.php)

## KVANTITATIVNE UKAZOVATELE PODZEMNEJ VODY PRE HLADINU PODZEMNÝCH VÔD (SONDY)

- **Menu názov:** Podzemná voda, kvantitatívne ukazovatele, sondy
- **Popis:** Prostredníctvom tejto služby budú prezentované grafické a tabuľkové interpretácie environmentálnych ukazovateľov vo vode ako jednej zo zložiek životného prostredia. Táto aplikácia umožní širokej verejnosti (laickej i odbornej) prostredníctvom prednastavených výberov získať kvantitatívne charakteristiky podzemných vôd na úrovni povodí a územno-správnych jednotiek za príslušné hodnotené obdobie, ktoré sú sledované v rámci štátneho monitorovacieho systému ŽP - Čiastkového monitorovacieho systému - VODA.
- **Link:** [http://atlas.sazp.sk/cmsvoda/podzem\\_kvant\\_sondy/index.php](http://atlas.sazp.sk/cmsvoda/podzem_kvant_sondy/index.php)



Picture 2

There is a navigation panel in the left bottom part, which serves for navigation among individual sub-pages.



Picture 3

### 2.1.2 User's Menu

#### Change profile

After clicking on this item you get into editing of your profile

#### Change password

After clicking on this item you can change your password

#### Reports receiving

After clicking on this item you can set about which applications you want to receive reports

#### Latest reports

After clicking on this item a list of latest reports with navigation panel is being displayed (Picture 3)

#### Log out

After clicking on this item you log out

### 2.1.3 Main part

Here a list of recently added reports. In the left bottom part there is a navigation panel (Picture 3) which serves for navigation among individual sub-pages.



## 2.2 Metainformation about the Application

You get here by clicking on any item in the Main menu. A **metainformation** about selected application is displayed (Picture 4). In the left part additional two items are displayed (Picture 5), connected with the application.

**KVANTITATÍVNE UKAZOVATELE POVRCHOVEJ VODY**

Prostredníctvom tejto služby budú prezentované grafické a tabuľkové interpretácie environmentálnych ukazovateľov vo vode ako jednej zo zložiek životného prostredia. Táto aplikácia umožní širokej verejnosti (laickej i odbornej) prostredníctvom prednastavených výberov získať kvantitatívne charakteristiky povrchových na úrovni povodí a územno-správnych jednotiek za príslušné hodnotené obdobie, ktoré sú sledované v rámci štátneho monitorovacieho systému ŽP - Čiastkového monitorovacieho systému - VODA.

**Kontaktné osoby:**

 <b>Ing. Beátka Trulíková</b>	 <b>Ing. Ján Cimerman</b>
<b>Organizácia:</b> Slovenská agentúra životného prostredia	<b>Organizácia:</b> Slovenská agentúra životného prostredia
<b>Zodpovednosť:</b> obsahová stránka	<b>Zodpovednosť:</b> technická stránka
<b>Telefón:</b> 048/4374138	<b>Telefón:</b> 048/4374143
<b>Mobil:</b>	<b>Mobil:</b>
<b>Fax:</b>	<b>Fax:</b>
<b>Email:</b> beata.trulikova@sazp.sk 	<b>Email:</b> jan.cimerman@sazp.sk 

**Správy ku aplikácii Kvantitatívne ukazovatele povrchovej vody**

Žiadne správy.

**Picture 4**

**APLIKÁCIA**

Podrobnosti

Link na aplikáciu

**Picture 5**

### Details

After clicking the details about the application are showed.

### Link to application

After clicking you pass directly to the application's address.

The list is divided into 3 parts. In the first part, there is a **description** of the application and for what it serves. In the second part, there is a **list of contact persons, contact details** and a definition of their **responsibilities** (content or technical part). In the third part, there are reports to application, it can be even more of them, and they are classified according to dates of their addition.

## 2.3 Changing of the profile

In this part you can **change your profile**. Your profile is showed (Picture 6), you can change it. You save changes by clicking on the item "Save".

## EDITÁCIA PROFILU

Polia vyznačené hrubým písmom sú povinné.

Odbor:	Útvar inšpekcie ochrany vôd
Titul pred:	
Meno:	user
Priezvisko:	User
Titul za:	
Tel:	
Fax:	
Email:	
<b>Meno prihl:</b>	user
Mobil:	

 Uložiť

### Picture 6

#### Department:

Department to which you belong

#### Titles in front:

Your titles in front of name, maximum 25 letters

#### Name:

Your first name, maximum 255 letters

#### Surname:

Your surname, maximum 255 letters

#### Titles after:

Your titles after name, maximum 25 letters

#### Tel:

Your telephone contact, maximum 50 letters

#### Fax:

Your fax contact, maximum 50 letters

#### Email:

Your e-mail address, maximum 255 letters

#### Log in name

Your log in name, compulsory item, maximum 40 letters

#### Mobil:

Contact to your mobile phone, maximum 50 letters

## 2.4 Changing of the password

You are showed interface for changing your password. (Picture 7)

ZMENIť HESLO

Staré heslo:	<input type="text"/>
Nové heslo:	<input type="text"/>
Nové heslo pre kontrolu:	<input type="text"/>
Zmeniť	

**Picture 7**

**Old password:**

Your old password, you have to enter it correctly, otherwise the change will not happen.

**New password:**

Your new password, use strong passwords (it is necessary to use a combination of digits and letters, the best way is to use unusual word which is not in dictionary).

**New password for checking:**

Here you enter new password again, this field serves for checking if you by chance did not make a mistake, in case the passwords do not correspond, you will be asked to enter them once more.

## 2.5 Receiving of the reports

Here you can set up, about which applications you want to **receive reports**. You are showed a list of applications and the applications about which you want to be informed are ticked automatically. (Picture 8) If you want to receive reports from the whole category, click on the field with title Whole category, with name of the category from which you want to receive the reports. If you want to receive all reports, right down there is a ticking field with title „All categories“, after selecting it, all applications are selected. For receiving you enter the filed „Enter“. If you did not select anything, you will receive no reports.

## ODOBERANIE SPRÁV

### OVZDUŠIE:

Celá kategória Ovzdušie:

- Kvalita ovzdušia - ročná
- odp1
- test
- mwenu

### VODA:

Celá kategória Voda:

- Povrchová voda, kvantitatívne ukazovatele
- Povrchová voda, kvalitatívne ukazovatele
- Podzemná voda, kvantitatívne ukazovatele, sondy
- Podzemná voda, kvantitatívne ukazovatele, pramene
- Podzemná voda, kvalitatívne ukazovatele

### ODPADY:

Celá kategória Odpady:

- Povrchová voda, kvantitatívne ukazovatele
- odp1
- test

### OCHRANA PRÍRODY:

Celá kategória Ochrana prírody:

- Povrchová voda, kvantitatívne ukazovatele
- odp1
- test -up1

Prihlásiť

Všetky kategórie:

**Picture 8**

## 3 ADMINISTRATOR MANUAL

### 3.1 Main Page



Picture 1

Front page is the same as the one on User's display, however new menu „Administration“ was added, and in the list of reports there is an icon for editing displayed, after clicking on it, you get into editing of selected report.

### 3.2 Administration menu

#### Applications

##### Add application

By clicking on the item you can add new application

##### Display not displayed applications

After clicking on this item you are showed a list of applications that are displayed.

#### Reports

##### Display not displayed reports

After clicking on this item you are showed a list of reports that are not displayed.

#### Organisation

##### Show

After clicking on this item a list of organisations is showed.

##### Create

After clicking on this item you can add new organisation.

#### Contact Persons

##### Show

After clicking on this item a list of contact persons is showed.

**Create**

After clicking on this item you can add new contact person

## **Users**

**Show**

After clicking on this item a list of users is showed

**Create**

By clicking on this item you can add new user.

### **3.2.1 Applications**

#### **3.2.1.1 Add application**

In this part a form is showed, where you can add new application.

## EDITÁCIA APLIKÁCIE

Polia vyznačené hrubým písmom sú povinné.

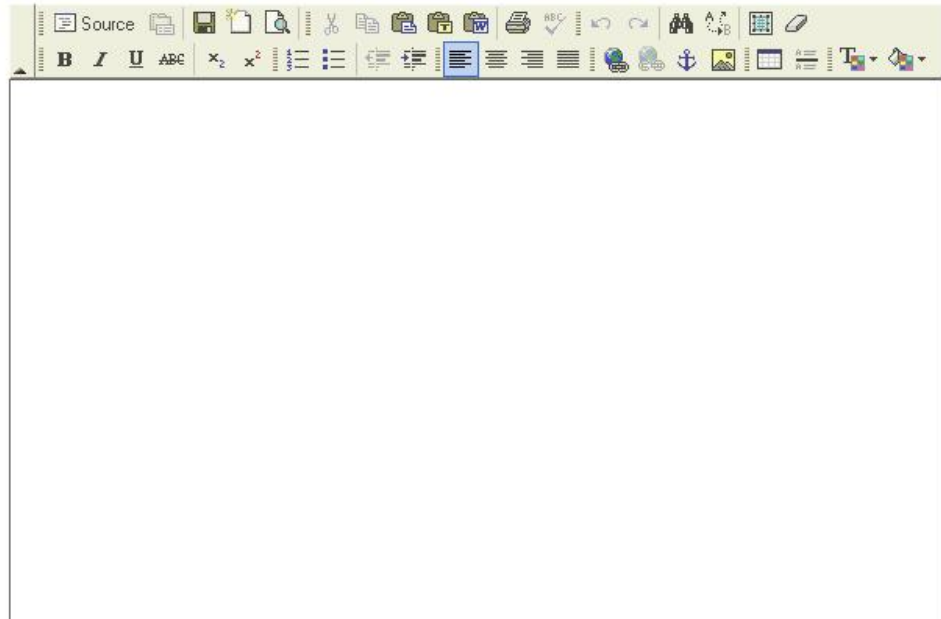
Katégória:

- Ovzdušie
- Voda
- Odpady
- Ochrana prírody

**Názov:**

**Názov v menu:**

**Popis:**

A rich text editor interface with a toolbar at the top containing icons for source, undo, redo, bold, italic, underline, text color, background color, bulleted list, numbered list, link, unlink, image, table, and other editing functions. Below the toolbar is a large, empty text area for entering the application description.

Zobrazovať:

**Url odkaz:**

## Kontaktné osoby:

**Dostupné kontaktné osoby:**

- Ing. Beátka Trulíková
- Ing. Ján Cimerman

**Priradené kontaktné osoby:**

Nie je priradená žiadna kontaktná osoba.

### Picture 2

#### Category

By clicking on individual categories you select into which category the application falls.

#### Title:

Compulsory field, title of the application, maximum 1000 letters

#### Title in menu:

Compulsory field, title which will be displayed in main menu, maximum 80 letters

#### Description:

Description of the application, maximum 1000 letters

#### Display

Option for displaying the application, implicitly NO is set, if NO is selected; application will be not showed to users.

#### URL reference

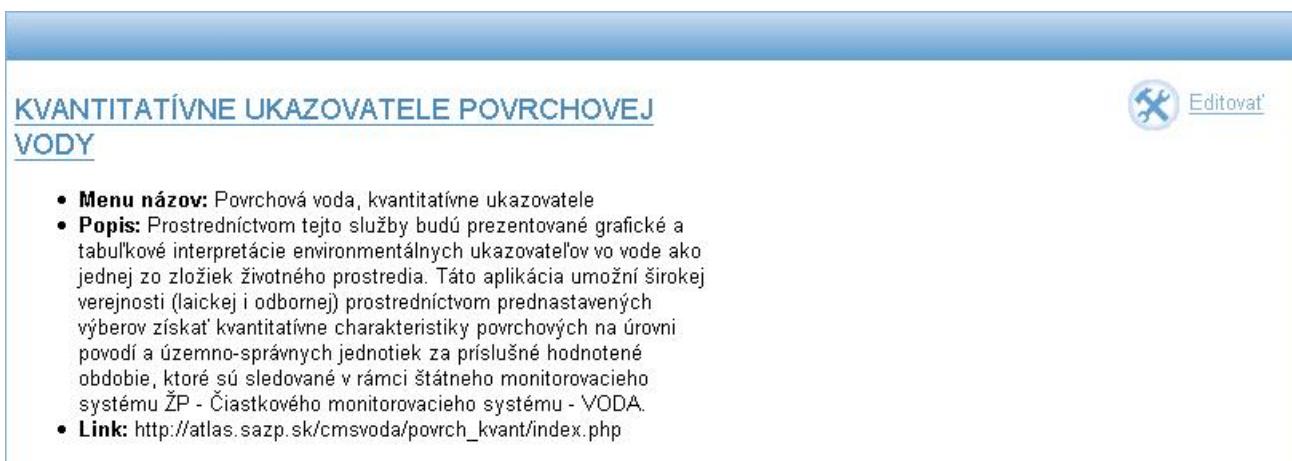
Address where the application is, enter in format <http://www.some-application.sk>


### Contact persons

Classification of contact persons, in left part in the light blue background there is a list of available persons, in the right part classified persons are displayed, if I want to assign a person, we can do it by shifting a person from the list of available persons into assigned persons, if we want to remove a person, then other way round.

#### 3.2.1.2 Display not displayed applications

A list of not displayed applications will be showed (Picture 3). By clicking on editing icon you can edit this action, by clicking on the title of the application a metainformation about this application is showed.



**KVANTITATIVNE UKAZOVATELE POVRCHOVEJ VODY**  Editovať

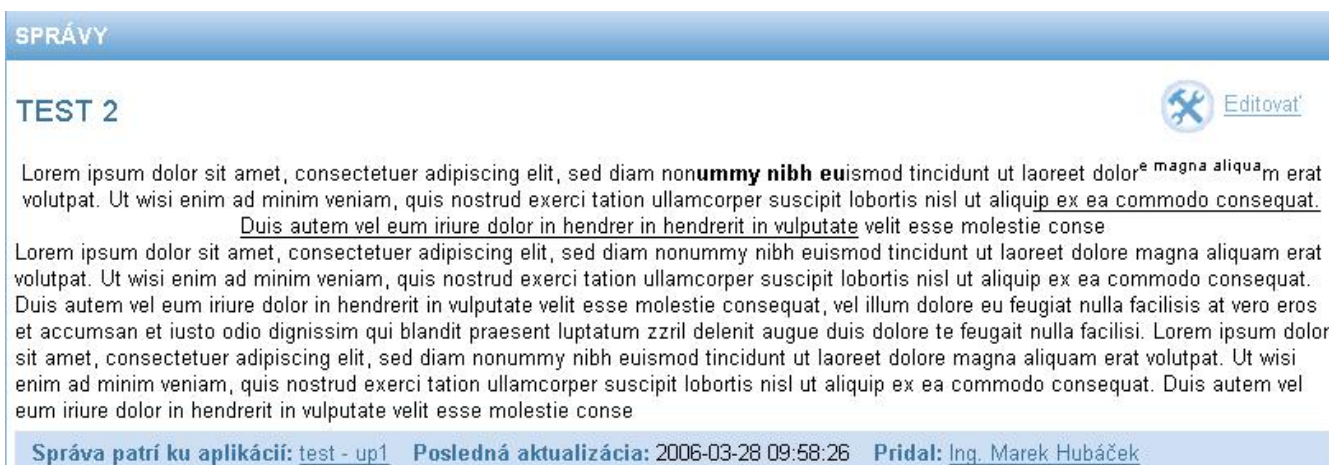
- **Menu názov:** Povrchová voda, kvantitatívne ukazovatele
- **Popis:** Prostredníctvom tejto služby budú prezentované grafické a tabuľkové interpretácie environmentálnych ukazovateľov vo vode ako jednej zo zložiek životného prostredia. Táto aplikácia umožní širokej verejnosti (laickej i odbornej) prostredníctvom prednastavených výberov získať kvantitatívne charakteristiky povrchových na úrovni povodí a územno-správnych jednotiek za príslušné hodnotené obdobie, ktoré sú sledované v rámci štátneho monitorovacieho systému ŽP - Čiastkového monitorovacieho systému - VODA.
- **Link:** [http://atlas.sazp.sk/cmsvoda/povrch\\_kvant/index.php](http://atlas.sazp.sk/cmsvoda/povrch_kvant/index.php)

Picture 3


#### 3.2.2 Reports

##### 3.2.2.1 Display not displayed reports

A list of not displayed reports will be showed (Picture 4). By clicking on editing icon you can edit this report, by clicking on the title of the application to which the report belongs (displayed in the bottom part), a metainformation about this application will be showed.



**SPRÁVY**

**TEST 2**  Editovať

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie conse

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie conse

Správa patrí ku aplikácii: [test - up1](#) | Posledná aktualizácia: 2006-03-28 09:58:26 | Pridal: [Ing. Marek Hubáček](#)

Picture 4



## 3.2.3 Organisations

### 3.2.3.1 Display

In this part, a list of organisations will be displayed (Picture 5).

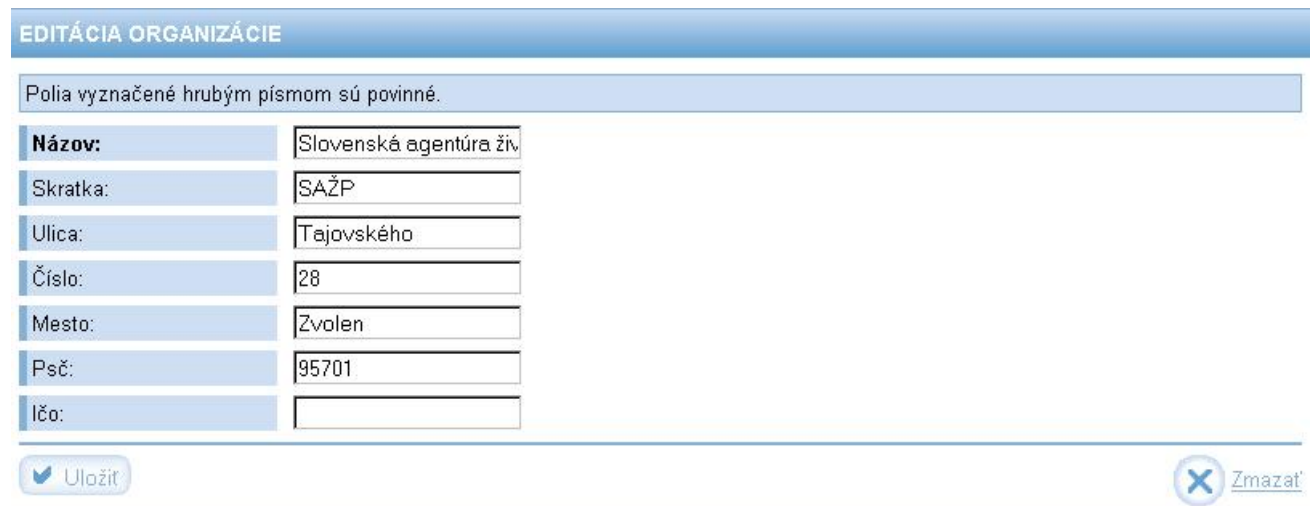


The screenshot shows a header bar labeled 'ORGANIZÁCIA'. Below it, the name of the organization is 'SLOVENSKÁ AGENTÚRA ŽIVOTNÉHO PROSTREDIA - SAŽP'. To the right of the name are two icons: a wrench and a trash can, with labels 'Editovať' and 'Zmazať' respectively. Below the name is a list of details:

- **Ulica:** Tajovského
- **Číslo:** 28
- **Mesto:** Zvolen
- **PSČ:** 95701
- **IČO:**

**Picture 5**

After clicking on editing icon a form for editing of the organisation will be showed (pic. 6), if you click on icon Delete, you delete respective organisation and all contact persons belonging to this organisation.



The screenshot shows a header bar labeled 'EDITÁCIA ORGANIZÁCIE'. Below it is a message: 'Polia vyznačené hrubým písmom sú povinné.' Below this is a form with several fields:

<b>Názov:</b>	Slovenská agentúra živ.
Skratka:	SAŽP
Ulica:	Tajovského
Číslo:	28
Mesto:	Zvolen
Psč:	95701
Ičo:	

At the bottom left is a button 'Uložiť' and at the bottom right is a button 'Zmazať'.

**Picture 6**

**Title:**

Compulsory field, Title of organisation, maximum 255 letters

**Shortcut:**

Shortcut of organisation, maximum 25 letters

**Street:**

Street, where organisation resides, maximum 255 letters

**Number:**

Street number, maximum 50 letters

**City:**

City where organisation resides, maximum 255 letters

**Post Code**

Post Code, maximum 25 letters

**Identification number of the organisation:**

Identification number of the organisation, maximum 25 letters

### 3.2.3.2 Create

After clicking on this item a form will be displayed to you, where you can add new organisation, this form is identical with the one for editing organisation.

### 3.2.4 Contact persons

#### 3.2.4.1 Display

In this part, a list of contact persons is displayed (Picture 7).

#### KONTAKTNÁ OSOBA

**ING. BEÁTKA TRULÍKOVÁ**  [Editovať](#)  
 [Zmazať](#)

- **Organizácia:** Slovenská agentúra životného prostredia
- **Zodpovednosť:** obsahová stránka
- **Telefón:** 048/4374138
- **Mobil:**
- **Fax:**
- **Email:** beata.trulikova@sazp.sk

---

**ING. JÁN CIMERMAN**  [Editovať](#)  
 [Zmazať](#)

- **Organizácia:** Slovenská agentúra životného prostredia
- **Zodpovednosť:** technická stránka
- **Telefón:** 048/4374143
- **Mobil:**
- **Fax:**
- **Email:** jan.cimerman@sazp.sk



**Picture 7**

After clicking on editing icon, a form for editing the contact person is showed (Picture 8), if you click on icon Delete, you delete respective contact person.

#### EDITÁCIA KONTAKTNEJ OSOBY

Polia vyznačené hrubým písmom sú povinné.

<b>Organizácia:</b>	Slovenská agentúra životného prostredia ▾
<b>Titul pred:</b>	Ing.
<b>Meno:</b>	Beátka
<b>Priezvisko:</b>	Trulíková
<b>Titul za:</b>	
<b>Telefón:</b>	048/4374138
<b>Fax:</b>	
<b>Email:</b>	beata.trulikova@sazp.s
<b>Zodpovednosť:</b>	obsahová stránka ▾
<b>Mobil:</b>	

 [Uložiť](#)  [Zmazať](#)

**Picture 8**

**Organisation:**

Organisation to which the contact person belongs

**Titles in front:**

Your titles in front of name, maximum 25 letters

**Name:**

Compulsory field, name, maximum 255 letters

**Surname:**

Compulsory field, surname, maximum 255 letters

**Titles after:**

Titles after name, maximum 25 letters

**Tel:**

Telephone contact to contact person, maximum 50 letters

**Fax:**

Fax contact to contact person, maximum 50 letters

**Email:**

Compulsory field, e-mail address of the contact person, maximum 255 letters

**Responsibility:**

Responsibility of the contact person, there are two possibilities to select, whether a responsibility for content or a responsibility for technical part

**Mobil:**

Contact to your mobile phone, maximum 50 letters

### 3.2.4.2 Create

After clicking on this item, a form is displayed to you, where you can add new contact person, this form is identical with the one for editing the contact person.

### 3.2.5 Users

#### 3.2.5.1 Display

In this part a list of users is displayed (Picture 9).

The screenshot shows a user management interface with a blue header bar labeled 'UŽÍVATELIA'. Below the header, two user profiles are listed. Each profile includes a name, a list of details, and two action buttons.

**ING. ERICH PACOLA**

- **Prihlasovacie meno:** erich
- **Práva:** užívateľ - Autorizovaný pre vstup a zakladanie popisných informácií o nových aplikáciách aplikácií
- **Odbor:** Útvar inšpekcie ochrany vôd
- **Telefón:**
- **Mobil:** 02154
- **Fax:**
- **Email:** marek.hubacek@sazp.sk

Buttons: Editovať, Aktivovať

**ING. MAREK HUBÁČEK**

- **Prihlasovacie meno:** admin
- **Práva:** redaktor - Autorizovaný pre vstup do systému
- **Odbor:** Útvar inšpekcie ochrany vôd
- **Telefón:**
- **Mobil:**
- **Fax:**
- **Email:** marek.hubacek@sazp.sk

Buttons: Editovať, Zrušiť



Picture 9

After clicking on an editing icon, a form for editing users is displayed to you (Picture 10), if you click on icon Delete, you deactivate respective user. By clicking on activate, non-active user is being activated.

**EDITÁCIA PROFILU**

Polia vyznačené hrubým písmom sú povinné.

Odbor:	Útvar inšpekcie ochrany vôd
Práva:	užívateľ
Titul pred:	Ing.
Meno:	Erich
Priezvisko:	Pacola
Titul za:	
Tel:	
Fax:	
Email:	marek.hubacek@sazp
<b>Meno prihl:</b>	erich
<b>Heslo:</b>	
Mobil:	02154

**Picture 10**

**Department:**

Department, to which a user belongs

**Rights**

User's rights

**Titles in front:**

Titles in front of user's name, maximum 25 letters

**Name:**

User's first name, maximum 255 letters

**Surname:**

Surname, maximum 255 letters

**Titles after:**

Titles after user's name, maximum 25 letters

**Tel:**

User's telephone contact, maximum 50 letters

**Fax:**

User's fax contact, maximum 50 letters

**Email:**

User's e-mail address, maximum 255 letters

**Log in name:**

Compulsory field, user's log in name, maximum 40 letters

**Password:**

Compulsory field, user's password, maximum 40 letters

**Mobil:**

Contact to mobile phone, maximum 50 letters

### 3.2.5.2 Create

After clicking on this item, a form is displayed to you, where you can add new user. This form is identical with the one for editing user.

## 3.3 Reports

### 3.3.1 Editing of reports

In this part a form for editing of the selected report is displayed to you. (Picture 11)

EDITÁCIA SPRÁVY

Polia vyznačené hrubým písmom sú povinné.

**Nazov:** test - sprava

**Uryvok:** ucted using AJAX scripts in a variety of screen reader software. The results are sure to surprise you!

**Obsah:** halk and cheese. Oil and water. For all the recent talk about AJAX, no one has fully explored whether these analogies can justly be applied to the combination of AJAX and screenreaders ... until now. In this insightful report,

**Aktualne:** Áno

**Zaslať upozornenie:**

**Picture 11**

#### **Title:**

Compulsory item, title of the report, maximum 255 letters

#### **Extract:**

Text displayed by displaying of all the reports, maximum 2000 letters

### Content

Content of the report, the length is not limited

### Actual:

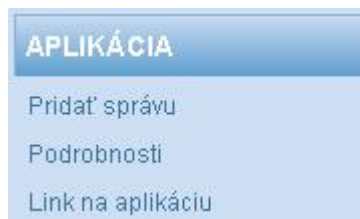
This option influences, if respective report is or is not displayed

### Send warning:

This option influences, if the warning is or is not sent to users registered for receiving reports about application to which this report belongs

### 3.3.2 Adding of the reports

You get into this part after clicking "Add report", in left menu, which is displayed to you after selecting any application (Picture12); this form is identical with the one for editing reports.



Picture 12

There is available comprehensive **Technical Documentation of the SEIS Web Application** in Slovak language, which includes full description of:

#### **Application Solution of SEIS:**

- Architecture Solution,
- Data layer,
- Application layer,
- Presentation layer,

#### **Technical Solution of SEIS:**

- Configuration of database server, way of installation,
- Configuration of WEB server, PHP, way of installation,
- 

with links to all partial technical documents and instructions as well as the user and administration manual.