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EUROPEAN NETWORK OF MOBILITY CENTRES

Thematic Priority **Human Resources & Mobility**

Deliverable D2.2 Working Prototype of the National Research Mobility Portal

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Introduction

This document represents the working prototype of the National Research Mobility Portal (RMP). It is available on http://www.eracareers-bg.net. The services which it offers are:

- publishing of job vacancies - RJOE

- management of ontology based practical information – developed own tool – business layer – on PhP, presentation layer – XML + XSL = XSLT, html, MySQL

This National RMP supports on a national level via Internet the provision of information and services to mobile researchers.

According to the first output of Work Package 2 focused on the Portal Architecture Specification the National RMP for Bulgarian researchers is built. As the Portal is considered to mirror the European Researcher's Mobility Portal (RMP), the considerations of its designers (Figure 1), namely the specifications constituted by Reggiani (a project deliverable ruled by EC Framework Contract No RTD-JRC / 00-04), are taken into account.
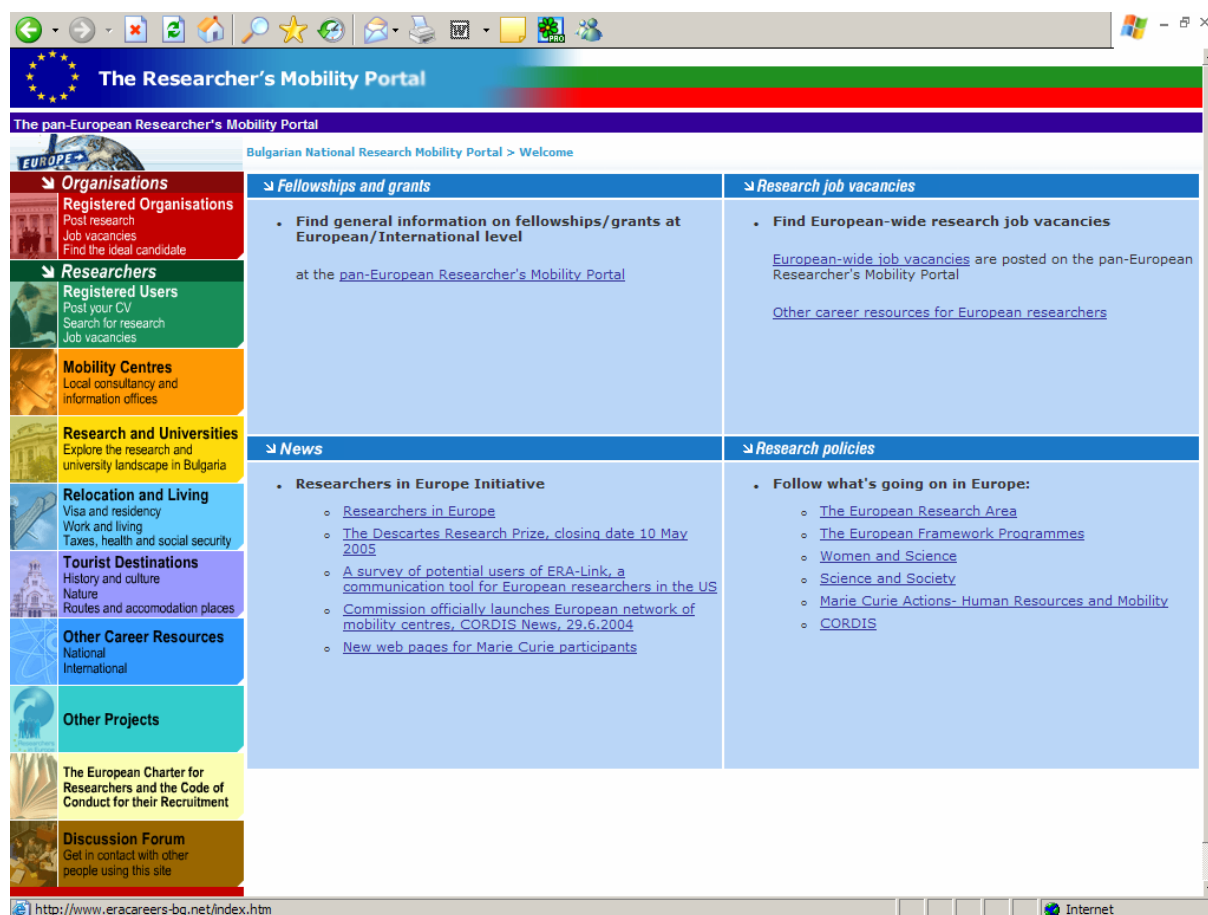

Figure 1. Bulgarian National RMP

This document is structured in three parts:

1. DataBase architecture – where the main database tables and relations are descibed

2. Administrative part – the administrative feathures for completing the database

3. Navigation part – organization of the portal – mirroring the European RMP.

DataBase architecture

Database Access Models

It was desided to use central store Data Storage as it was mentioned in Deliveralbe 2.1.

Ontology

Data description is for research fields.

There are two ontologies used for storing data information on the web portal. The first one - for storing job vacancies, based on the Orthelius classification as it was mentioned in the previous deliverable and the other one - for practical information data.

Portal Security Architecture

Currently the National Research Mobility Portal is running on Apache and PHP working on LINUX OS.

On figure 2 is shown the Security Architecture of the National RMP. On the first level there are Original Back End DBServer and RJOE DB – they are master. Data are collected in them.

Here is described (as it is shown on figure 2) the architecture to the Original DB Server, but the same is also RJOE scheme.

The Original DB Server collects Job Vacanceis – it is one master server. The replication to the Front End DB is under SSH – Tunnel Connection. Then Slave DBS generates XML via PHP to XSL presentation from business logics. Finaly, it requests to APACHE with HTML to the End User – there are request and response from the user.

This security architecture denies access to Master DB from the end user.

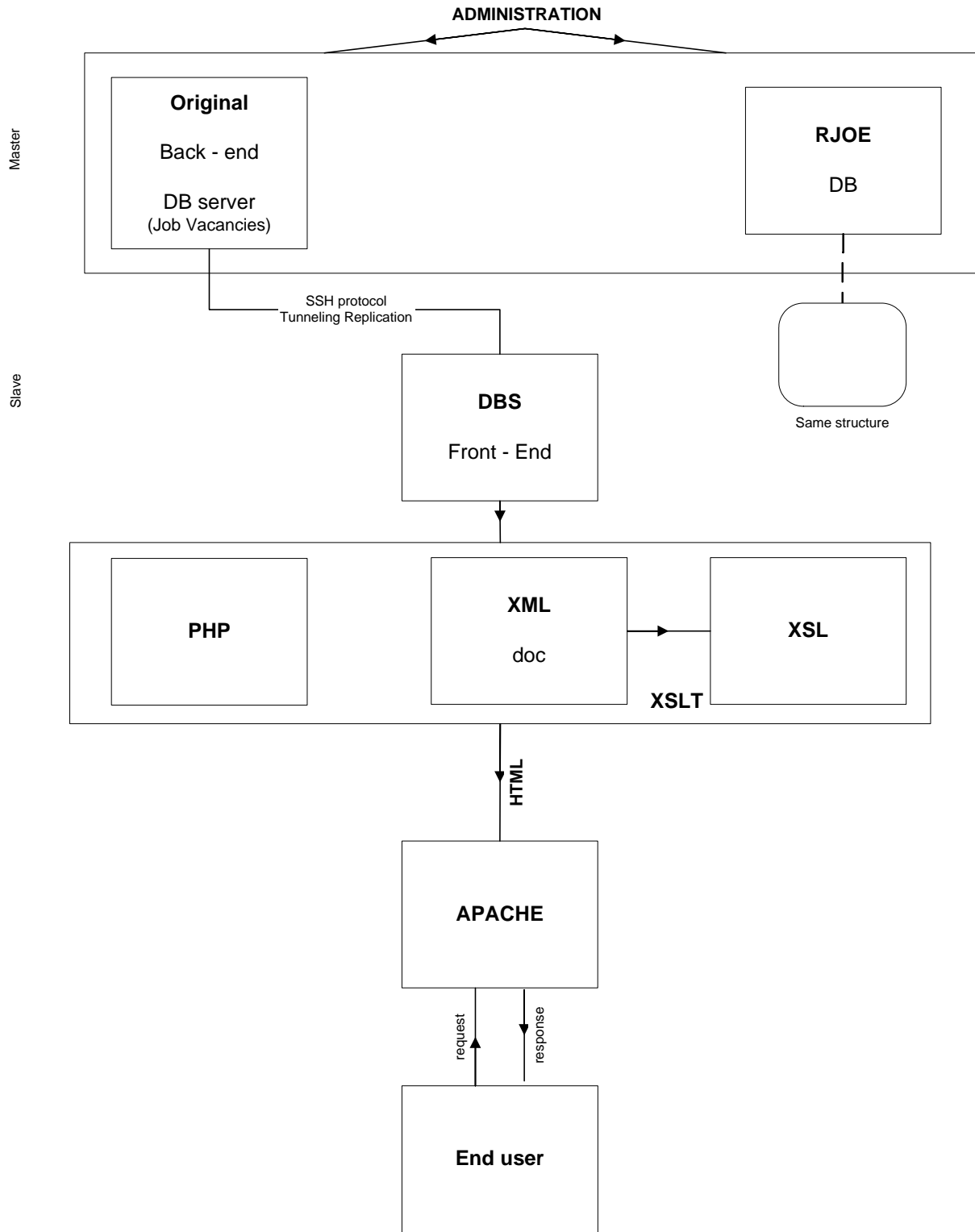This architecture allows export at any XML scheme.

Figure 2. DB structure

Application Server

For the Pilot version of the National RMP it is decided to use PHP as a programming language at the application layer. The choice has been conditioned by using the Reggianis' RJOE tool functionality which is written in PHP on behalf of need to make a quick start-up of the BulRMC Web site and start gathering practical information and job offers from the local mobility centers in Bulgaria.

Tree structure

The tree structure of data in the relational DB model is based on the NestedSets (Ceiko) algorithem for combined materialised path. It is used because it is more flexible for data tracking.

DB tables

The main DB structure is shown on figure 3. The core of the DB consists of four tables or two pairs of tables Categories - Categories Index and Links - Links Index. This is used because it is more flexible and each link can relate to more than one category (1 link more than one node) and it avoids reiterations. The process for creating of relative categories is optimised.

Additionally, in the DB architecture are included Log Tracks (only for unique clicks).
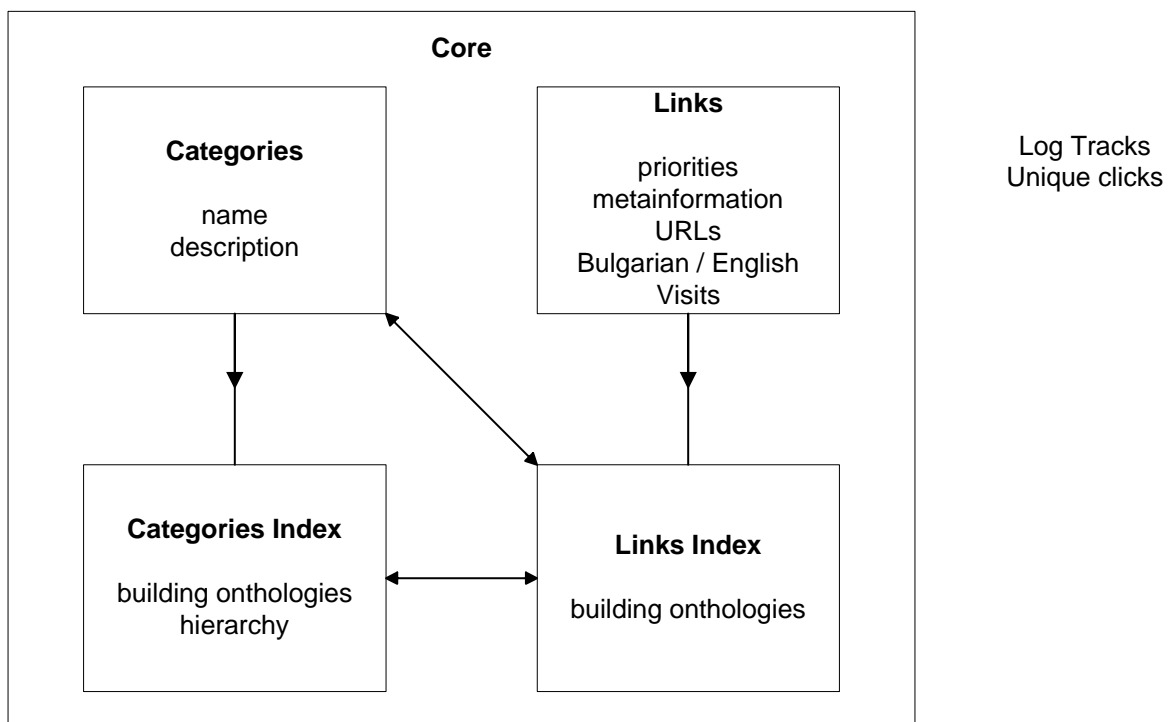

Figure 3. DB structure

Administrative part

Administration of the Original DB Server is web-based. The main categories relate to the navigation of the Bulgarian National RMP, i.e.: Job Vacancies, Researchers, Mobility Centers, Research & Universities, Relovation & Living, Tourist Destinations, Other Career Recourses and Projects. As it is visible on figure 4 the categories are on English but some of the official words and sentences are in Bulgarian – easier for filling.
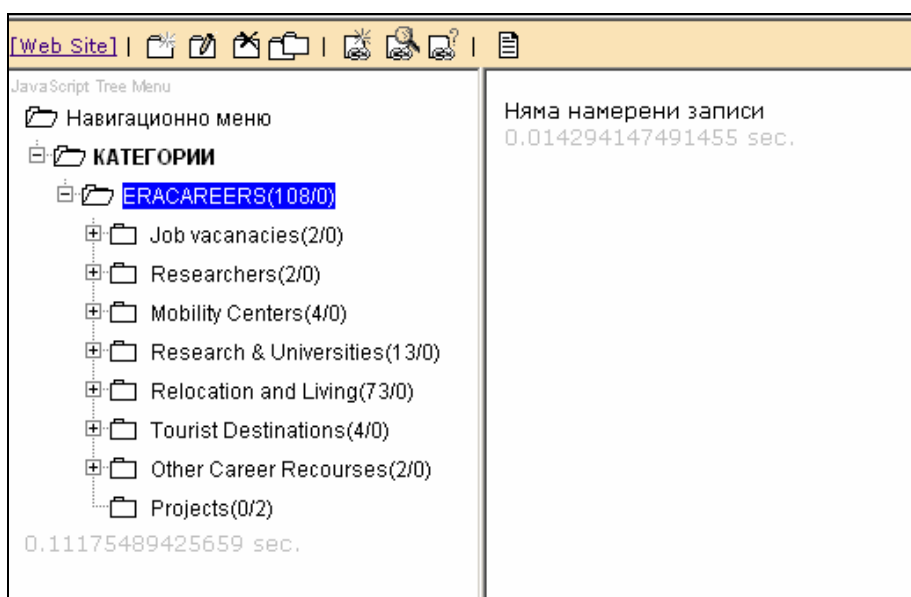

Figure 4. Main Structure

The DB Server supports as well English as Bulgarian data. During the filling up the data there are two possibilities – to add data description in English and in Bulgarian. On figure 5 the first part is in Bulgarian – Title, URL, Descriptions, Keywords and the second part – the same in English. This is useful for presentation of data on the web portal – easy to separate web-pages on two languages.

Using the web-based administration it is possible to add new data, edit the existing ones and delete some records (figure 6).
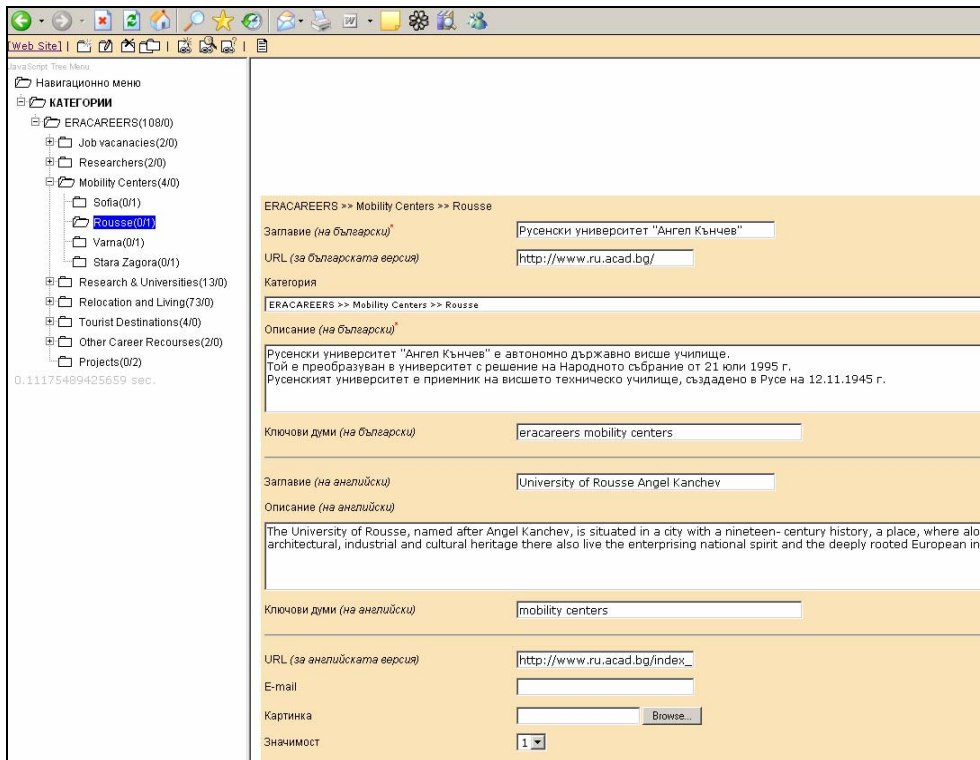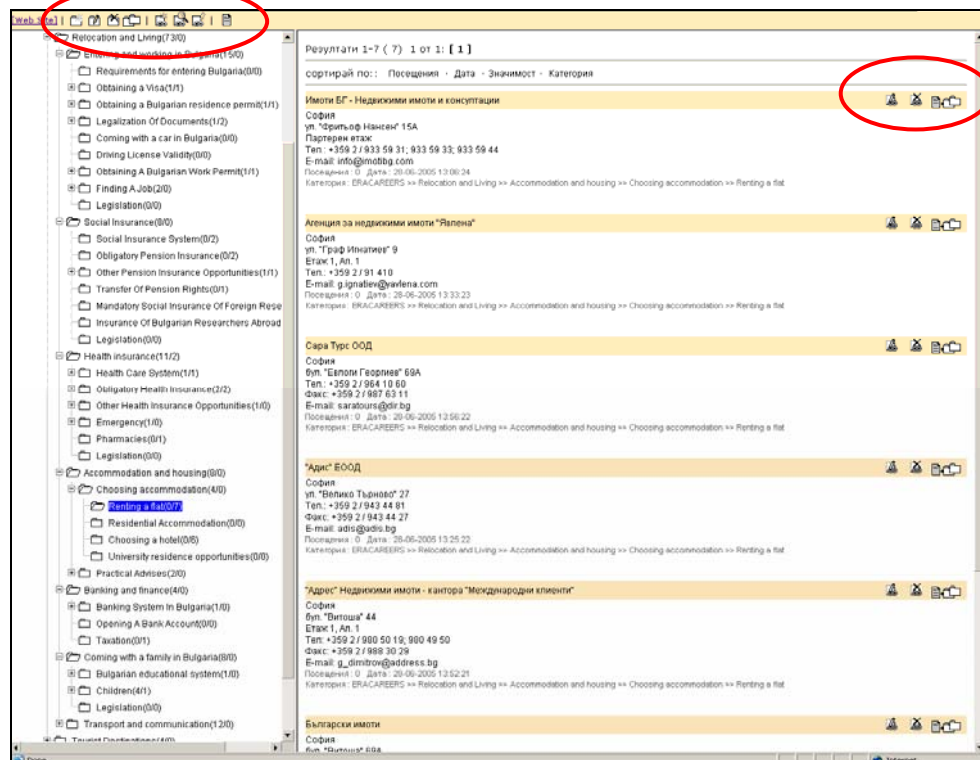
Bulgarian Network of Research Mobility Centres

Figure 5. Mobility Centers

Add, Edit, Delete Categories

Add, Edit, Delete records

Figure 6. Relocation and Living

Navigation part

In the project BulRMCNet is considered the National Research Mobility Portal to mirror the European Researcher's Mobility Portal.

The National RMP is published on http://www.eracareers-bg.net/. The simplest solution relies obviously on an accurate selection of the web site requirements:

- available in English, as static pages;
- without any access restriction;
- without frames;
- clearly with a suitable set of meta-data;
- each being page-specific when applicable.

The RMP Structure is given on Figure 7. It includes the following categories:

- Organisations – foreseeing the possibility for registering an organisation, posting research, publishing job vacancies, and finding the ideal candidate
- Reseachers –protected area for Registered Users with opportunity to publish the CV and search for research opportunities.
- Mobility Centers – access points to the portals of the Regional Resesarch Mobility Centers (RMC) in Bulgaria, as well as to the bridgehead organisations all around Europe.
- Research & Universities – provides general information on the Bulgarian research landscape and opportunity to explore Research Institutions and Universities in Bulgaria
- Relocation & Living in Bulgaria – provides practical information on: Visa and Residency in Bulgaria, Work & Living in Bulgaria, Health & Social Security in Bulgaria, Taxes and Financial Issues, and Educational Opportunities.
- Tourist Destinations – opportunity to explore Bulgaria: History, Culture, Folklore, Cuisine, Treasures, Nature, etc.
- Other Career Resourses – access point to other on-line job offers – not related to the researchers' profession.
- Projects – access to the web sites of FP6 projects REKS and BulRMCNet.
- European Charter – access to a web page with the text of the European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers
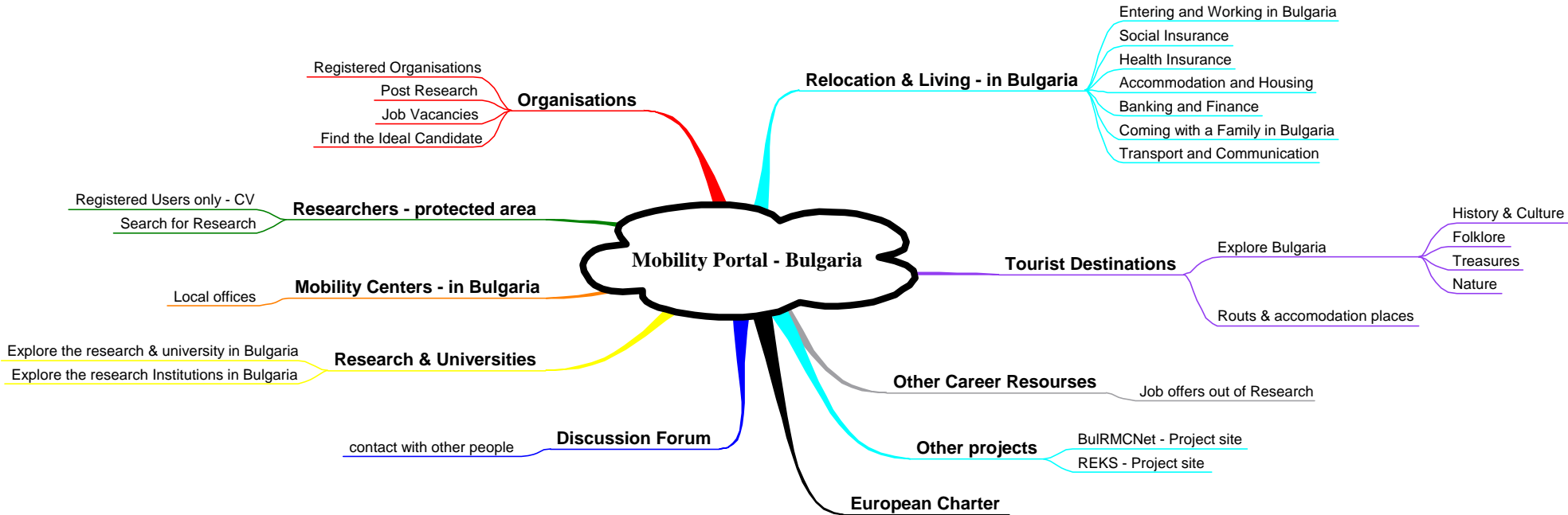- Discussion Forum – contact with other people

Figure 7 – National RMP Structure

Page Structure

Figure 8 is the graphical lay out proposed for the portal implementation. It is based on the use of the template of the European RMP.

- The **European RMP header is** on the top of the page – it includes the last version of the standard IPG header including the following elements: banner, path and service tools.
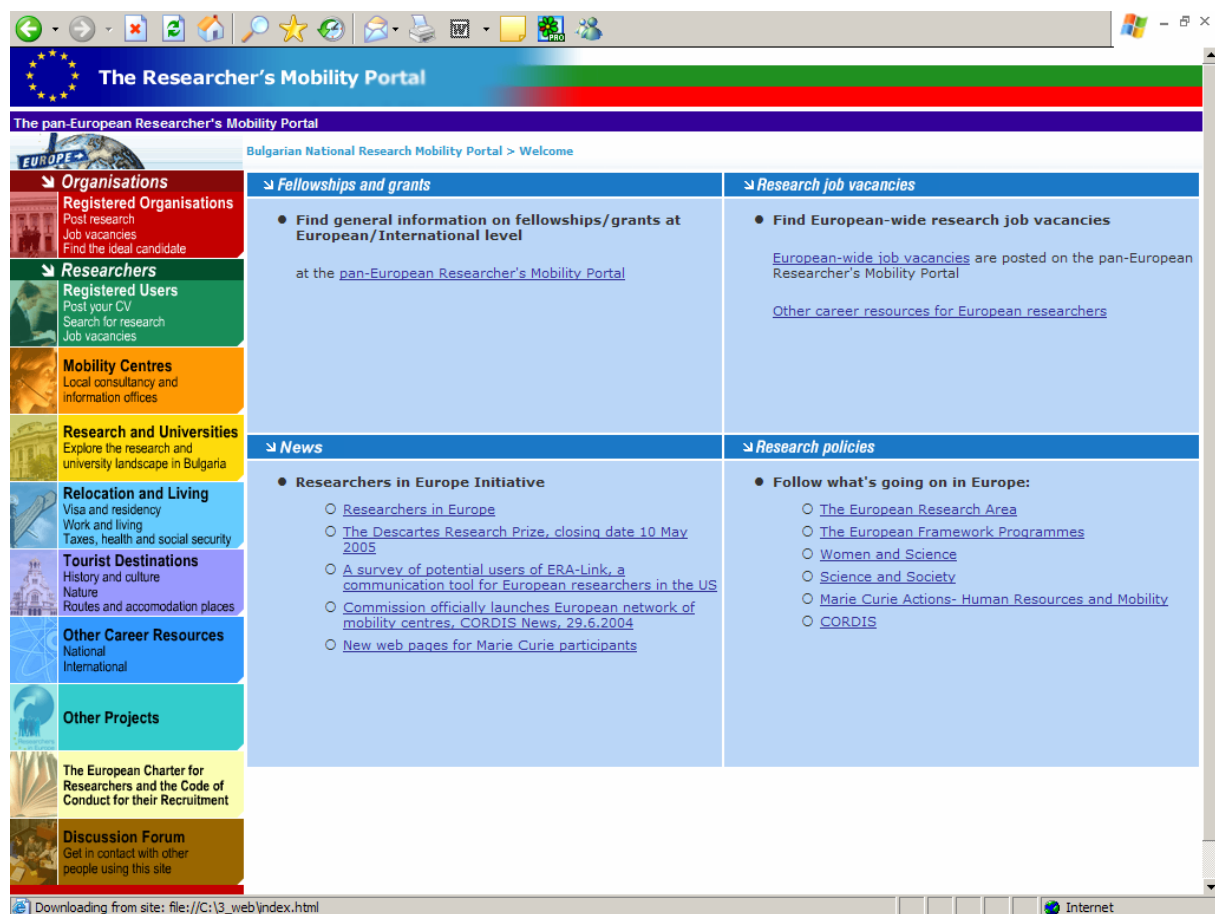- The **main menu on the left**

Figure 8 – Page Structure

Main Menu

The main areas of the National RMP related to the main areas of European RMP are:

- Organisations,
- Researchers,
- Regional Mobility Centers,
- Research & Universities,
- Relocation & Living,

- Tourist Destinations,
- Other Career Resources,
- Projects,
- The European Charter,
- Discussion Forum.

The web pages providing Practical Information for Bulgaria (Research and Universities, Relocation and Living, and Tourist Destinations) are organised in similar manner – including interactive map of Bulgaria with regional contact points. In addition, they will contain centralised information on administrative procedures and legislation in the respective areas and links to the respective authorities and service providers. The main topics of Relocation & Living are: Entering and Working in Bulgaria, Social Insurance, Health Insurance, Accommodation and Housing , Banking and Finance, Coming with a Family in Bulgaria, Transport & Communication. As it is visible on figure 9 each one of the topics has different records. On figure 10 there is National RMP presentation for Relocation & Living Topics.
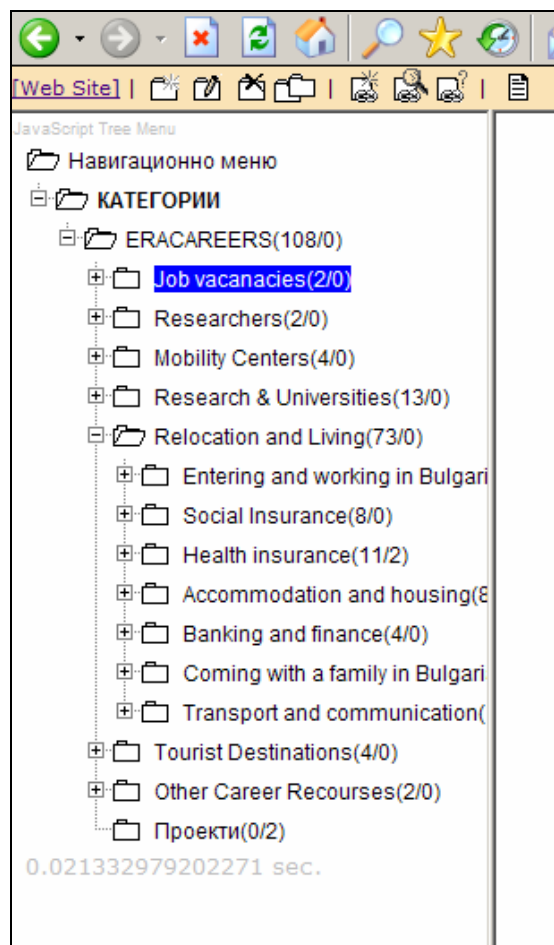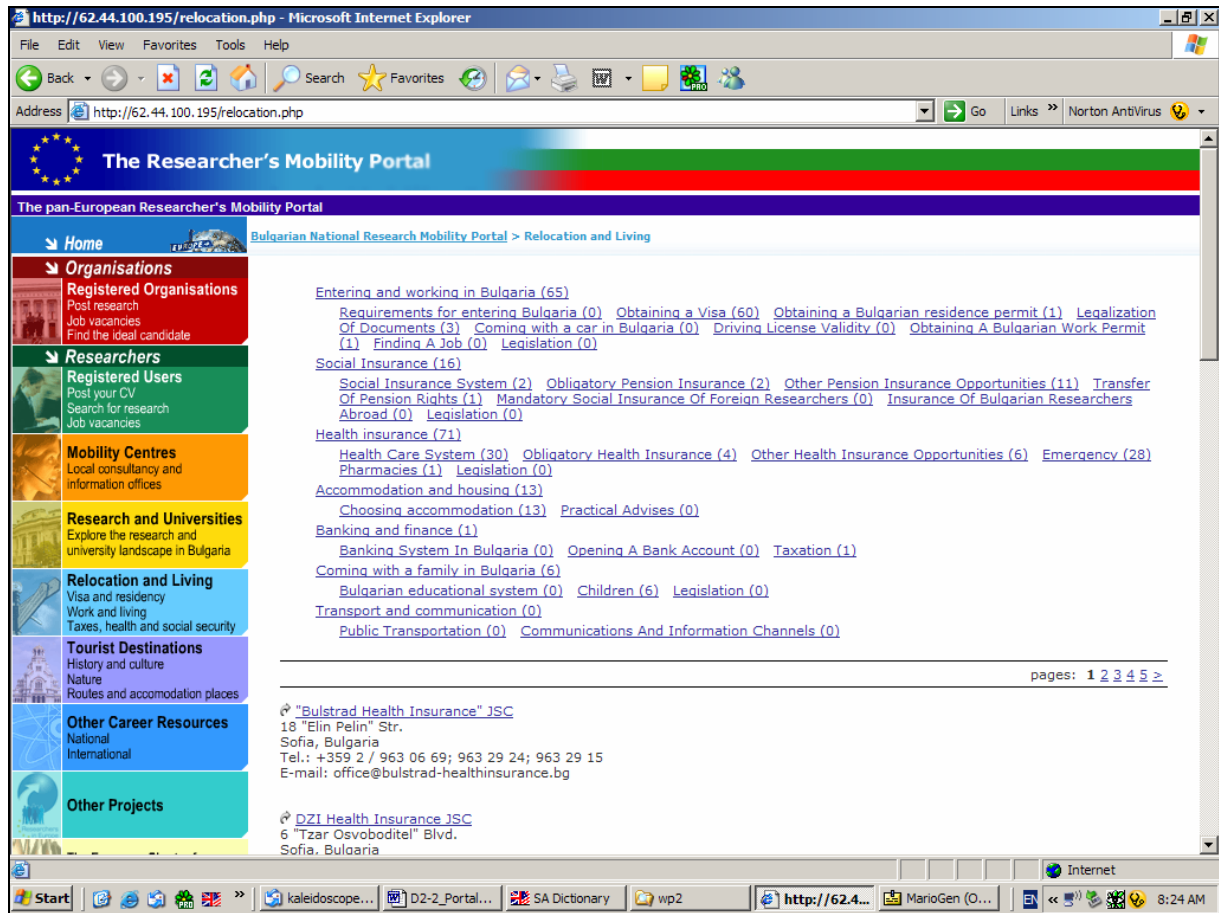

Figure 9 – Relocation & Living

Figure 10 – National RMP presentation – Relocation & Living Topics

Let look closely the the Social Insurance, for example. There are 8 records. Two of them are for Obligatory Pension Insurance. On figure 11 is shown their presentation in the DB and on figure 12 - on the Web Portal.
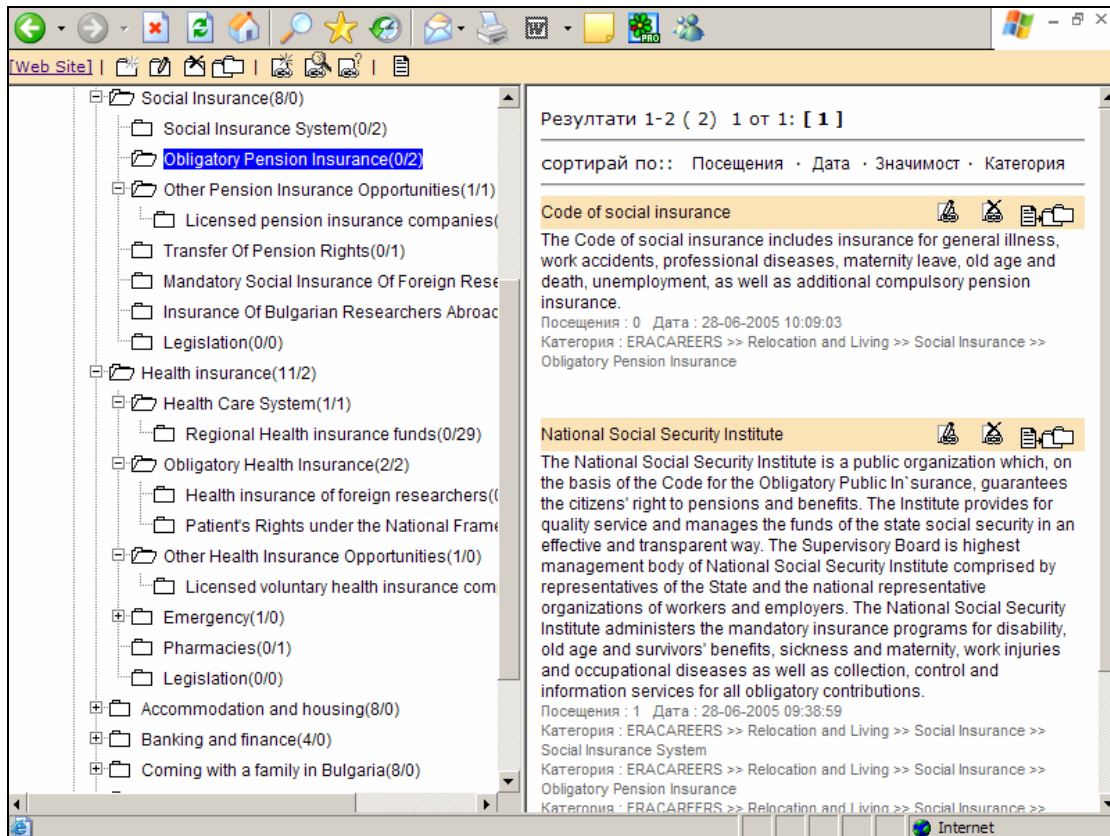
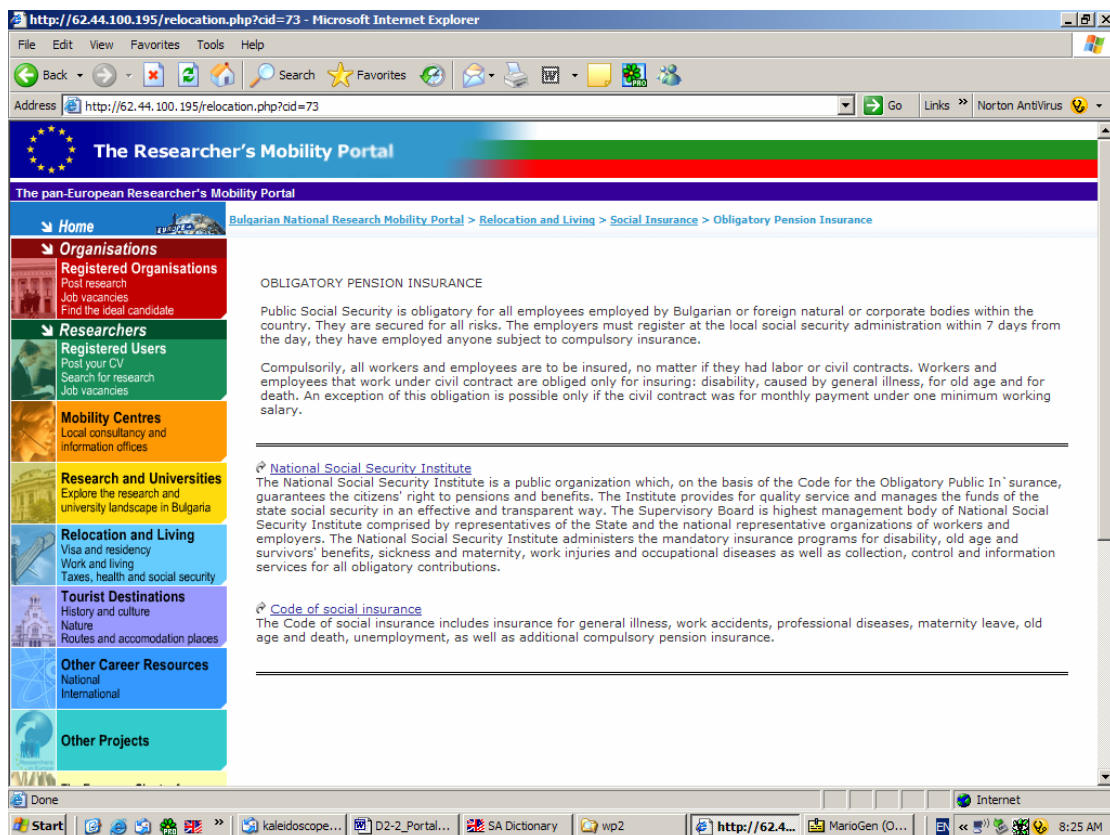*Figure 11 – DB for Obligatory Person Insurance (Relocation & Living)*

Figure 12 National RMP presentation - Obligatory Person Insurance (Relocation & Living)

Conclusion

The National RMP delivers in his prototype working version a lot of information about the Relocation and Livling in Bulgaria. It has a key role for the effective cooperation and coordination of the RMC in Bulgaria as well as to all organizations, participating in such mobility activities. The posted via RJOE Job Vacancies are also an effective link to the European Researcher's Mobility Portal.

Bulgarian National RMP design is a mirror of the European one.