Common BAEKTEL portal for indexing all available OER and other supporting TEL content

DEV 3.2

BAEKTEL

Blending academic and entrepreneurial knowledge
in technology enhanced learning

*Blending Academic and Entrepreneurial Knowledge
in Technology enhanced learning – BAEKTEL*

www.baektel.eu

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DEV 3.2

**Common BAEKTEL portal for indexing all available OER
and other supporting TEL content**

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Dissemination Level	
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Contents

1 Introduction

This report describes the software development and deployment of a common BAEKTEL portal for indexing of all available OER and other supporting TEL content including audio, video and written text materials, published by BAEKTEL partners. Indexing of all data provides searching capabilities for any type of published content covering every partner institution.

University of Belgrade (UB) hosts the central repository, which includes:

- BAEKTEL Metadata Portal (BMP) with metadata for all published OER within BAEKTEL network.
- Terminological web application for management, browse and search of terminological resources.
- Web services for linguistic support (query expansion, information retrieval, OER indexing, etc)
- Annotation of selected resources (not all)
- OER repository on local edX platform.

The ICT solution for BAEKTEL OER framework supports a central OER system for publishing, while partner institutions use their own repositories for OUR development.

In addition, BAEKTEL network can integrate OER that are not created by partner institutions, regardless of the place where they are stored. Those resources only have to be registered and described in the central metadata repository.

Ovaj izveštaj opisuje razvoj softvera i implementaciju BAEKTEL portala za indeksiranje raspoloživih otvorenih obrazovnih resursa i drugih sadržaja za podršku tehnološki potpomognutom učenju, uključujući audio, video i tekstualne materijale, koje publikuju BAEKTEL partneri. Indeksiranje svih podataka omogućava pretragu bilo kog tipa publikovanog sadržaja, od bilo koje partnerske institucije.

Univerzitet u Beogradu (UB) hostuje centralni repozitorijum koji čine:

- BAEKTEL Portal sa metapodacima o svim OER sadržajima publikovanim u okviru BAEKTEL mreže.
- Terminološka veb aplikacija za rukovanje, prelistavanje i pretragu terminoloških resursa
- Veb servisi za lingvističku podršku (proširenje upita, pronalaženje informacija, indeksiranje OER resursa i sl.).
- Anotacija izabranih resursa (ne svih)
- OER repozitorijum na lokalnoj edX platformi.

IKT rešenje za BAEKTEL OER mrežu podržava centralizovani OER sistem za publikovanje, dok partnerske institucije koriste sopstvene repozitorijume za razvoj OER-a.

Osim toga, u BAEKTEL mrežu se mogu integrisati i OER koji nisu kreirale partnerske institucije, bez obzira gde se nalazi fizički. Dovoljno je da takav OER bude registrovan i opisan u centralnom repozitorijumu metapodataka.

2 BAEKTEL metadata platform

2.1 ResourceSpace platform

The BMP development is based on the existing open source Digital Asset Management (DAM) system ResourceSpace.

ResourceSpace has been released under a BSD-style license. It requires PHP, MySQL, and the GD Graphics Library, and works with most web server software such as Apache. (http://www.resourcespace.org/)

Main features:

ResourceSpace has been selected due to its main features:

- Intelligent search ordering by scoring resources against keywords on basis of user search activity

- Preselected groups of resources

- Resource access level permissions by user group

- Multilinguality, allowing the user to change the language, with most major languages supported
- Automatic thumbnail creation for resources.
- Multiple file upload using SWF upload
- Possibility for geolocation searching
- Possibility for changing metadata input fields

- Platform: PHP, MySql
- Operating system: any
- License: BSD Open source license[1]

Razvoj centralizovanog portala za metapodatke je zasnovan na postojećem softverskom rešenju otvorenog koda ResourceSpace.

ResourceSpace je publikovan pod *BSD* licencom. Za njegov rad potreban je PHP, MySQL, i GD biblioteka (*Graphics Library*), a radi na većini veb servera, kao što je Apač (*Apache*). (http://www.resourcespace.org/)

Karakteristike:

ResourceSpace je izabran kao najpogodniji alat zbog sledećih svojstava:

- Inteligentna pretraga – resursi se rangiraju prema svakoj ključnoj reči korišćenoj u pretrazi

- Grupisanje resursa prema unapred formiranim grupama

- Dozvole pristupa – prava pristupa svakom resursu prema korisničkim grupama

- Višejezičnost – interfejs postoji na više jezika, a korisnik sam može da menja
- Automatsko kreiranje ikonica za sve kurseve

- Istovremeno postavljanje više fajlova korišćenjem SWF upload
- Mogućnost pretrage po geolokaciji
- Mogućnost menjanja šeme metapodataka

- Platforma: PHP, MySql
- Operativni sistem: bilo koji
- Licenca: BSD softver otvorenog koda

2.2 Portal user profiles and user interface

The main purpose of the metadata portla is to describe courses created on edX

Osnovna namena portala za metapodatke je opisivanje kurseva kreiranih na edX

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[1] Preuzeto sa sajta http://en.wikipedia.org/wiki/ResourceSpace

(edx.baektel.eu) portal. Except courses, different downloadable resources, in different format, can be uploaded and described. On the other side, this portal helps users to find resources of interest, and it provides easy access to courses. There are three different user roles on site:

1. Administrator – creates accounts, controls resource upload, manages the portal
2. Teacher – describes course created on edx portal
3. Learner – search described courses and download uploaded resources

Everyone who wants to upload resources or describe courses on portal, must have an account. Only users with accounts can use the portal as teachers.

Guidelines for describing OER metadata on the portal are available on the next link: http://meta.baektel.eu/pages/help.php

Detailed description of all metadata is available on the url http://meta.baektel.eu/pages/metadata.php

Changing the interface language is possible by clicking on the link *"Language",* which is placed in the bottom left corner of the portal home page (Figure 1).

(edx.baektel.eu) portalu. Osim kurseva, na portal se mogu postaviti i opisati različiti materijali, različitih formata, koji se kasnije mogu preuzimati sa sajta. Sa druge strane, korisnicima se olakšava pronalaženje željenog resursa, kao i pristup kursevima. Postoje 3 različite uloge korisnika na portalu:

1. Administrator – kreira naloge, kontroliše postavljanje resursa na portal, upravlja portalom
2. Kreator kursa – opisuje kurs kreiran na edX portalu.
3. Polaznik kursa – pregleda opisane kurseve i preuzima postavljene resurse.

Svako ko želi da postavlja materijale ili opisuje kurseve na portalu, mora da poseduje nalog na sajtu. Tek tada moguće je postavljati i opisivati resurse.

Uputstvo za unos meta podataka o obrazovnim resursima na portalu nalazi se na adresi: http://meta.baektel.eu/pages/help.php

Detaljan opis svih metapodataka nalazi se na sledećoj veb adresi http://meta.baektel.eu/pages/metadata.php

Promena jezika interfejsa, moguća je klikom na link "*Language*" u donjem levom uglu početne strane portala. (Slika 1)

Figure 1 Interface language change   Slika 1 Promena jezika interfejsa

When the user follows the link, a web page is opened that contains a list of all available interface languages. The user chooses a language from the list, and saves their choice using "Save button" (Figure 2 – Choosing interface language).

Kada se pristupi linku, otvara se veb stranica koja sadrži listu svih dostupnih jezika interfejsa. Korisnik sa liste bira jezik i zatim klikom na dugme "Save", čuva promene (Slika 2 – Izbor jezika interfejsa).

Language selection

Please select your language below.

Language	Srpski ▼

Save

Figure 2 – Choosing interface language   **Slika 2 – Izbor jezika interfejsa**

2.2.1 Learner

View all courses	Pregled svih kurseva

The user can access the courses on the portal in two ways:

1. Using *"Recently Added"* link (Figure 3)
2. Using *"BAEKTEL courses"* link (Figure 4)

Both links can be found on the portal homepage. By clicking on the course logo, the course content on the edX portal is accessed.

Svim kursevima na portalu moguće je pristupiti na dva načina:

1. Korišćenjem linka *"Recently Added"* (Slika 3)
2. Korišćenjem linka *"BAEKTEL courses"* (Slika 4)

Oba linka se nalaze na početnoj stranici portala. Klikom na logo kursa, pristupa se sadržaju kursa na edX portalu.

Home │ Recently added │ Help & advice │ Upload │ Team Centre
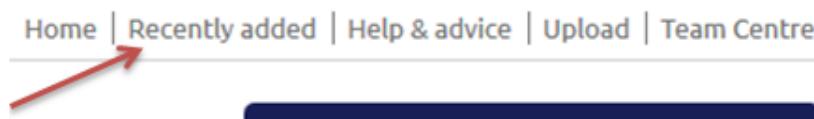
Figure 3 Main menu   Slika 3 Osnovni izbor

::BAEKTEL
BAEKTEL official site

::BAEKTEL
courses
All our courses

::MANUAL
Manual for teachers

Figure 4 BAEKTEL courses   Slika 4 BAEKTEL kursevi

View course's/resource's details	Pregled podataka kursa/resursa

To view all meta data for one course the user must first change the form of the list of courses (Figure 5)

Da bi se pregledali svi meta podaci određenog resursa, prvo mora da se promeni forma prikaza svih kurseva (Slika 5) .


Figure 5 Selection of display template   Slika 5 Izbor načina prikaza kurseva

On the list of all courses, on the right side, there is a *"View"* link (Figure 6). When this link is accessed, all metadata of selected course became visible.

Na listi svih kurseva, sa desne strane, nalazi se link *"View"* (Slika 6). Kada se pristupi linku, prikazuju se svi meta podaci izabranog kursa.

Figure 6 Link for course metadata preview   Slika 6 Link za prikaz metapodataka kursa

2.2.2   Teacher

User log in	Prijavljivanje korisnika

Users log in to the metadata portal using the *"Log in"* link. (Figure 7)

Prijava na portal za metapodatke se vrši preko linka *"Log in"* (Slika 7)

Home | Recently added | Help & advice

Simple search
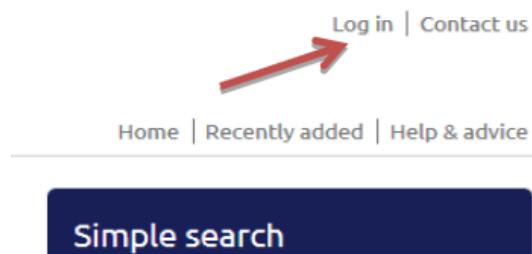
Figure 7 Log in   Slika 7 Prijavljivanje

After accessing the link, the login form with username and password fields is displayed (Figure 8).

Nakon pristupa linku, prikazuje se forma za unos korisničkog imena i lozinke (Slika 8)..
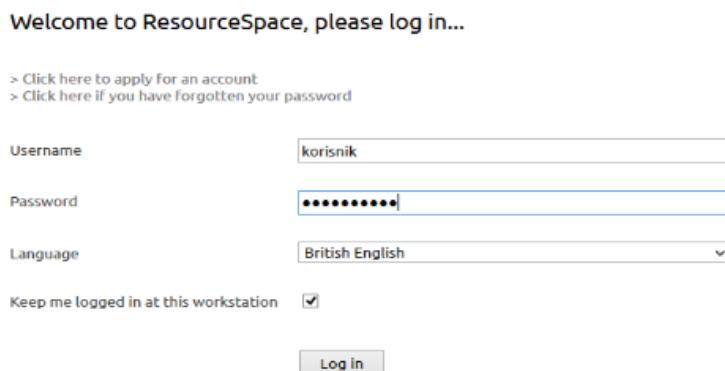
Welcome to ResourceSpace, please log in...

> Click here to apply for an account
> Click here if you have forgotten your password

Username	korisnik
Password	••••••••
Language	British English
Keep me logged in at this workstation	☑

Log in

Figure 8 Log in data   Slika 8 Podaci za prijavljivanje

If the user does not have an account, they have to send a request for account creation. Using the *"Click here to apply for an account"* link, the user gets the registration form with personal data (Figure 9)

When the portal administrator verifies all data, they create and activate the account, and send login details (username and password) to the user.

Only registered users can add new content on portal

Ukoliko korisnik ne poseduje parametre pristupa potrebno je da pošalje zahtev za kreiranje naloga. Da bi se kreirao, na linku *"Click here to apply for an account"*, popunjava se forma sa ličnim podacima (Slika 9)

Nakon provere podataka, administrator portala kreira i aktivira nalog, a zatim šalje korisniku podatke o korisničkom imenu i lozinci

Само корисници који имају налог могу додавати садржај на портал

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Tempus

Request user login

Please complete the form below to request a user account.

Your full name *	Pera Perić
Your e-mail address *	pera.peric@rgf.rs
Position *	Asistent
Organization *	Rudarsko-geološki fakultet
CV:	Od 2012. godine zaposlen na fakultetu kao asistent na katedri za Informatiku. Uključen i u rad na Tempus projektu

Anti-Spam *
Please enter the following code: 2321

2321

Request user login

Figure 9 User registration   Slika 9 Registracija korisnika

Changing password. To change a password, it is necessary to access the link showing the user name (Figure 10). After that, the form for password change will be displayed. The user must insert old and new password into appropriate fields (Figure 11).

Promena lozinke. Za promenu lozinke potrebno je pristupiti linku sa korisničkim imenom (Slika 10), a zatim na formi koja se prikaže (Slika 11), treba uneti staru i novu lozinku.

Pera Perić | Log out | Contact us

Home | Recently added | Help & advice | Upload
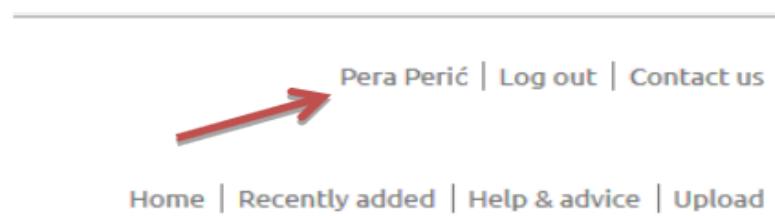
Figure 10 Link for password change   Slika 10 Link za promenu lozinke

Change your password

Enter a new password below to change your password.

Current password	
New password	
New password (retype)	

Save

Figure 11 Password change   Slika 11 Promena lozinke

| The user describes a course created on edx.baektel.eu, in the following way: | Prethodno kreiran kurs na portalu edx.baektel.eu, opisuje se na sledeći način: |

1. First, the user must log in
2. Then, the *"Upload"* (Figure 12) link is accessed, and the form for describing the course is displayed (Figure 13).

1. Prvo je potrebno prijaviti se na portal
2. Pristupa se linku *"Upload"* (Slika 12), nakon čega se prikazuje forma za unos podataka (Slika 13).
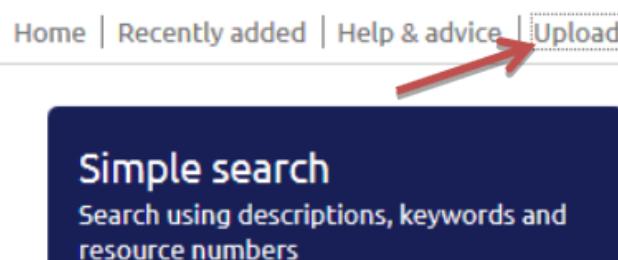
Figure 12 Description start   Slika 12 Početak opisivanja

3. Fields with mark with * are required.

3. Polja obeležena simbolom * su obavezna.

Figure 13 Course metadata   Slika 13 Metapodaci kursa

*Field **location** is required and it represents the link to the course that is created on edx.baektel.eu portal. If the*

*Polje **location** je obavezno i predstavlja link ka kursu na edx.baektel.eu portalu. Ukoliko kurs još nije*

course in not yet created, the field value should be #.

4. After adding data, the form for uploading a picture (Figure 14) is displayed. The picture that is uploaded represents the logo of the preciously described course.

5. After the logo is uploaded, the site administrator checks data correctness, and if everything is all right, the course becomes visible on the meta portal.

kreiran za vrednost ovog polja uneti simbol #.

4. Nakon unosa podataka, prikazuje se forma za dodavanje slike (Slika 14). Slika koja se dodaje predstavlja logo kursa koji je prethodno opisan.

5. Nakon što je postavljen logo kursa, administrator portala proverava ispravnost podataka, i ako je sve kako treba, kurs postaje vidljiv na meta portalu.
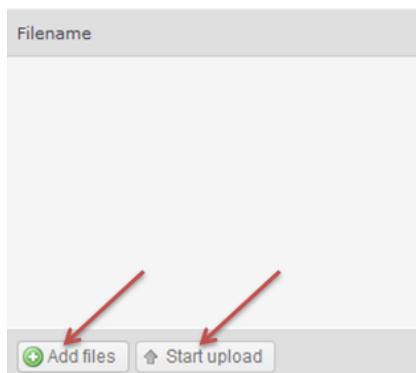
Figure 14 Adding picture   Slika 14 Dodavanje slike

Adding downloadable resources	Unos resursa koji se preuzimaju

If the user wants to add and describe a document, picture or video clip, that are not related to an edX portal course, the procedure is the same as the procedure for describing a course. The only difference is in the last step. Instead of the course logo, the user uploads the material for download.

If it is necessary to add more than one word into a textual field, every word must be separated by a comma ",".

Ukoliko na portal želimo da dodamo i opišemo neki dokument, sliku ili video zapis koji se ne odnose na kurs sa edX portala, postupak je isti kao za opis kursa. Razlika je samo u poslednjem koraku. Umesto da se doda logo kursa, na to mesto se dodaje materijal koji treba da se preuzme.

Ukoliko u tekstualno polje treba uneti više od jednog pojma, pojmove odvajamo simbolom "," (zarez).

2.3 The metadata set

2.3.1 Metadata overview

Table 1 Metadata description

Title	Resource name
Creator	Person who creates the resource
Description	Concise description of resource
Language	A language of the content of the resource.
Date	Date when the resource was made available to the public
Type	Resource type (best practice, exercise, lesson…)
Identifier	Identifier is a unique code that provides unambiguous access to the resources
Version	Version (1.1 , 2.1 , 2.3 …)
Status	*In progress…*
Format	The format is the layout of a file in terms of how the information contained in the resource is organized
Size	Resource size
Location	Specific character string that constitutes a reference to a resource
Interactivity Level	"very low": documents intended for printing" low ": video clips "medium ": hypertext "high" : lesson with multiple choice exercises providing feedback, "very high": virtual environment (3D)
Context	School, Higher Education, Training, Lifelong learning
Intended End User Role	Principle user(s) for which this learning resource was designed
Typical Learning Time	Approximate or typical time it takes to work with or through this learning object
Publisher	USB, UB, UNIKG, UNI, UBL, UNITZ, UNIM, UL, TUIASI, ACMP, NIS
Rights	Rights
Cost	Price
Keywords	Keywords that describe resource
Coverage	Continent and country
Subject	Field of science

Tabela 1 Opis metapodataka

Title	Naziv resursa
Creator	Autor resursa
Description	Kratak opis
Language	Jezik na kojem je resurs publikovan
Date	Datum od kada je resurs dostupan
Type	Tip resursa (primer dobre prakse, vežba, lekcija)
Identifier	Identifikacioni broj
Version	Verzija (1.1 , 2.1 , 2.3 …)
Status	*Trenutno u fazi dorade*
Format	Formati dostupnih resursa na kursu koji mogu biti preuzeti
Size	Veličina resursa
Location	Veb adresa koja vodi na resurs
Interactivity Level	"vrlo nizak": dokumenta koja mogu da se štampaju "nizak": video klipovi "srednji": hipertekst "visok" :lekcije sa više različitih tipova vežbi i predavanja "vrlo visok": virtuelno 3D okruženje
Context	Škola, Visoko obrazovanje, Obuka, Celoživotno učenje
Intended End User Role	Korisnici kojima je kurs namenjen
Typical Learning Time	Vreme koje je potrebno za savladavanje kursa
Publisher	USB, UB, UNIKG, UNI, UBL, UNITZ, UNIM, UL, TUIASI, ACMP, NIS
Rights	Prava
Cost	Cena koštanja
Keywords	Ključne reči koje opisuju resurs
Coverage	Kontinent i država
Subject	Oblast nauke (nrp. Informacioni sistemi...)

2.3.2 Short metadata description

Title	
A name given to the resource.	Naziv dodeljen resursu.

Creator	
Person, group of people or organizations responsible for making the content of the resource.	Osoba, grupa ljudi ili organizacija odgovorna za izradu sadržaja resursa.

Description	
Concise description of resources	Sadrži opis resursa

Language

A language of the content of the resource. Use ISO639-2 codes for language codes. Value is selected from the Vocabulary.	Jezik sadržaja resursa. Koristi se ISO639-2 standard za kodove jezika. Vrednost se bira iz rečnika podataka.

Date

Date when the resource was made available to the public.	Datum kada je resurs postao dostupan javnosti.

Type

Type identifies the nature of the content of the resource and it should be selected, from the next list: Best practice, Case study, Exercise, Guidelines, Lesson, Reference material	Tip definiše prirodu sadržaja resursa i vrednost se bira iz liste: Primer dobre prakse, Studija slučaja, Vežba, Uputstvo, Lekcija, Referentni materijal

Identifier

Identifier is a unique code that provides unambiguous access to the resources. Assignment of a code that will include code of partner institution that publishes the resource. For example: UB-0503	Identifikator predstavlja jedinstveni kod koji omogućava jednoznačan pristup resursu. Dodela šifre koja će obuhvatiti šifru partnerske institucije koja publikuje resurs. Na primer: UB-0503

Version

Version indicates the version of the software (e.g. alpha, beta), as well as of the published document (e.g. first edition, second edition...)	Verzija ukazuje na verziju softvera (npr. alfa, beta), kao i publikovanog dokumenta (npr. prvo izdanje, drugo izdanje...).

Status

Status indicates the stage of development of the resource. It pertains to textual resources, not multimedia or software. It indicates whether the resource development is completed and the resource is ready for publication.	Status ukazuje na fazu razvoja u kojoj se resurs nalazi. Odnosi se na tekstualne resurse, a ne na multimedije ili softvere. Ukazuje na to da li je razvoj resursa završen i spreman za publikovanje.

Format

Format is the layout of a file in terms of how the information contained in the resource is organized. This field can also represent format types of resource attachments.	Format je izgled datoteke u smislu načina organizacije informacija sadržanih u resursu. Takođe, ovo predstavlja tipove formata dodataka uz resurs.

Size

The size of the digital resource in bytes. Automatically generated with no possibility of editing.	Veličina digitalnog resursa izražena u bajtovima. Automatski se generiše bez mogućnost izmene.

Location	
The uniform resource locator, abbreviated as URL (web address), is a specific character string that constitutes the reference to the resource.	URL (veb adresa), je specifična niska znakova koja predstavlja referencu na resurs.

Interactivity Level	
Indicates the degree to which the learner can influence the aspect or behavior of the component	Ukazuje na stepen mogućeg uticaja učenika na prikaz ili ponašanje komponente.

Context	
The principle environment within which the learning and use of this learning object is intended to take place (Such as School, Life Long Learning...).	Osnovno okruženje u okviru koga će se odvijati učenje i korišćenje ovog obrazovnog materijala (Kao što su Škola, Stalno učenje...)

Intended End User Role	
The main user group for which this learning resource was designed	Osnovna grupa korisnika za koje je obrazovni resurs namenjen

Typical Learning Time	
Approximate or typical time it takes to work with or through this learning object.	Procenjeno ili tipično vreme potrebno za savladavanje sadržaja ovog obrazovnog materijala.

Publisher	
A publisher is the individual, group, or organization named in the document as being responsible for that document's publication, distribution, issuing, or release.	Izdavač je osoba, grupa ili organizacija koja je navedena u dokumentu kao odgovorna za objavljivanje, distribuciju, izdavanje ili puštanje u opticaj tog dokumenta.

Rights	
Contains information on intellectual property rights, rights of protection of copyright and the property rights.	Sadrži informacije o pravima intelektualne svojine, autorska prava i imovinska prava.

Cost	
Whether the use of this learning object requires payment.	Da li korišćenje ovog obrazovnog materijala zahteva neko plaćanje.

Keywords	
List of terms or keywords, in a particular field, for use in indexing and information retrieval.	Skup termina ili ključnih reči, u nekom određenom polju, koji se koristi za indeksiranje i pretragu informacija.

Subject	
The systematic arranging into classes (classifying), according to common characteristics or affinities, content, topics, themes or concepts that are the subject of a branch of science or methodical research.	Sistemsko organizovanje u klase (klasifikacija), u skladu sa zajedničkim karakteristikama ili zajedničkim afinitetima, sadržajem, temama ili pojmovima koji su deo jedne grane nauke ili metodičkog istraživanja.
Coverage	
Region plus country.	Kontinent i država.

3   LRMI tagging

The Learning Resource Metadata Initiative (LRMI) is proposed as an extension to the Schema.org metadata vocabulary addressing the needs of the educational community. It was, launched in 2011, as a joint initiative of Google, Yahoo, Microsoft Bing, Yandex and W3C. Schema.org provides a collection of schemas for HTML pages markup in ways recognized by major search providers and used for structured data interoperability (Barker / Campbell 2014.).

Learning Resource Metadata inicijativa (LRMI) je predložena kao proširenje Schema.org rečnika metapodataka koji treba da zadovolji potrebe obrazovne zajednice. Publikovana je 2011, kao zajednička inicijativa Gugla, Jahua, Majkrosofta, Binga, Jandeksa i W3C. Schema.org obezbeđuje kolekciju shema za označavanje HTML strana etiketama i atributima koje glavne pretraživačke mašine mogu da prepoznaju i potom koriste za interoperabilnost strukturiranih upita (Barker / Campbell 2014).

The main rationale for the approach fostered by IMS GLC (IMS Global Learning Consortium) is that the choice of a standardized learning object metadata vocabulary has valuable and beneficial institutional and pedagogical implications.

Glavni razlog ovakvog pristupa koji podržava IMS GLC (IMS Global Learning Consortium) je što standardizacija rečnika metapodataka obrazovnih objekata ima značajne i korisne institucionalne i pedagoške implikacije.

Increasingly, businesses are realizing that tagging their content with LRMI metadata can contribute to their visibility on the web by increasing the accessibility of their materials to potential users.

Kompanije sve više shvataju da obeležavanje sadržaja LRMI metapodacima može doprineti njihovoj vidljivosti na vebu, povećanjem dostupnosti publikovanih materijala potencijalnim korisnicima.

The Schema.org initiative was the result of the exponential growth of data on the web

Inicijativa Schema.org je rezultat eksponencijalnog rasta količine podataka

and large intranets, which made the location of web pages containing data of interest more and more difficult.

The solution to this problem was found in introducing metadata, with the goal to improve the display of search results, thus making it easier for users to find the right web pages.

To that end, content publishers insert machine readable information into the code of web pages, which helps search engines interpret the sense of the text on those pages. One example of such tagging for a page containing a research paper is:

koja se publikuje na vebu i u lokalnim intranet mrežama, što sve više otežava pristup veb stranicama koje sadrže podatke od interesa.

Rešenje ovog problema je pronađeno u uvođenju metapodataka sa ciljem da se unapredi prikaz rezultata pretrage i tako olakša pronalaženje relevantne strane, odnosno dokumenta.

U tu svrhu, onaj koji publikuje sadržaj ubacuje mašinski čitljive informacije u kod veb stranice, koji pomaže pretraživaču da tumači smisao teksta na tim stranicama. Primer takvog označavanja za stranicu koja sadrži jedan istraživački članak je:

```
<div itemscope itemtype="http://schema.org/ScholarlyArticle">
    <h1 itemprop="name">Raster georeferencing</h1>
    <p itemprop="author" itemscope itemtype="http://schema.org/Person">
      <span itemprop="name">Ranka Stanković</span>,
      <span itemprop="affiliation">University of Belgrade –
          Faculty of Mining and Geology</span>
    </p>
</div>
```

More details about tagging of static pages according to LRMI in (Stanković, 2015).

Više detalja o označavanju statičkih strana saglasno LRMI inicijativi se može naći u (Stanković, 2015).

4 Search scenario

4.1 Simple search scenario

Access to the meta.baektel.eu portal data can be simple and advanced. Simple search form is visible on the right side of the home page. (Figure 15, Figure 16)

Pristupanje podacima na portalu meta.baektel.eu može biti jednostavnom i naprednom pretragom. Sa desne strane, nalazi se forma za jednostavnu pretragu. (Slika 15, Slika 16)
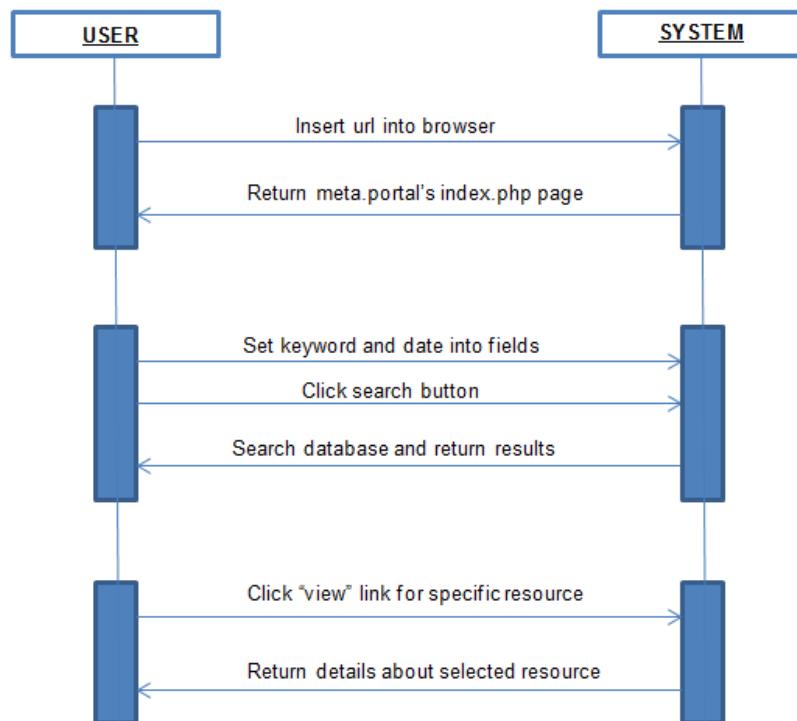
Figure 15 Simple search scenario   **Slika 15 Scenario jednostavne pretrage**
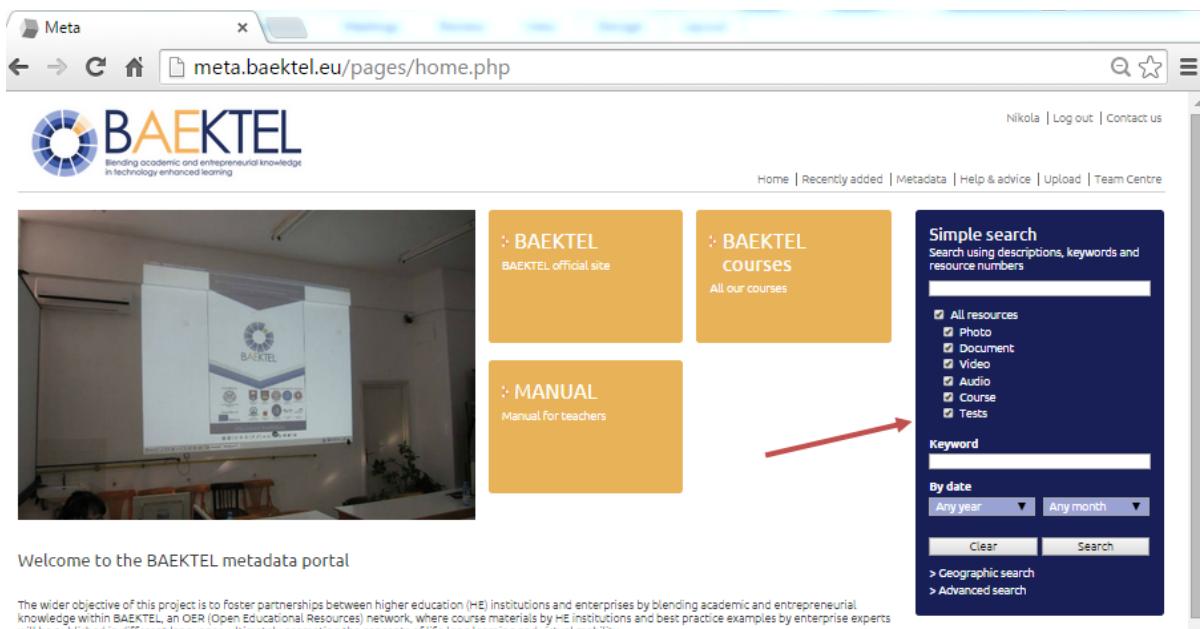
Figure 16   **Slika 16**

To fill the search form (Figure 17):

1. Insert resource/course description or ID

Za popunjavanje forme za pretragu (Slika 17):

1. Uneti opis ili ID resursa/kursa

2. Choose resource/course type	2. Odabrati tip resursa/kursa
3. Insert keywords	3. Uneti ključne reči
4. Choose date when resource/course is published on the portal	4. Odabrati datum publikovanja resursa na portalu
5. Click search button	5. Pristupiti Search linku (dugmetu)
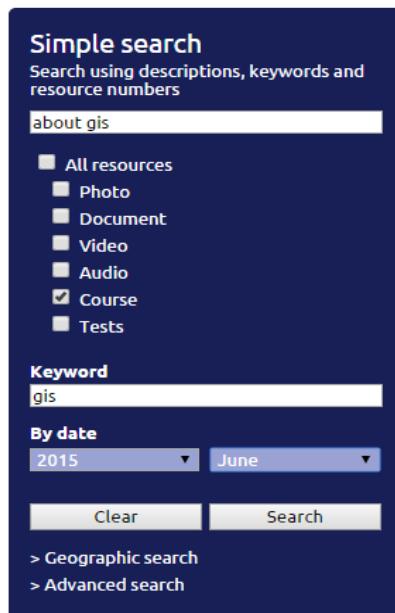
Figure 17 Simple search form	**Slika 17 Forma za jednostavnu pretragu**

System returns every resource/course that matches the given criteria. (Figure 18)

Sistem vraća svaki kurs/resurs koji odgovara zadatim kriterijumima. (Slika 18)
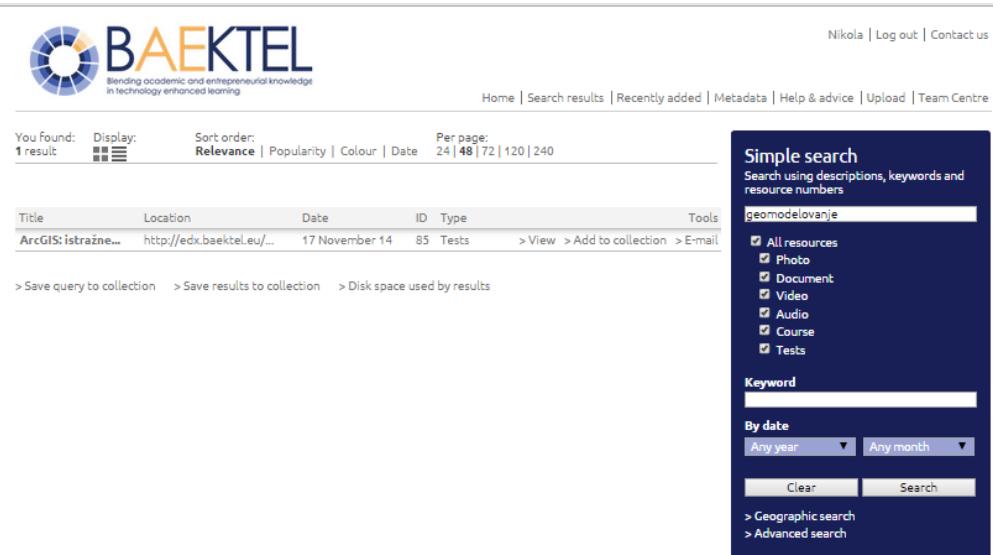
Figure 18 Search results	**Slika 18 Rezultat pretrage**

By clicking on the "View" link, the user gets detailed information about the course/resource.

Pristupom linku "View", dobijaju se detaljni podaci o kursu/resursu.

Figure 19 Selected course metadata   **Slika 19 Medapodaci o izabranom kursu**

4.2   Advanced search scenario

Access to the meta.baektel.eu by advanced search scenario is given in Figure 20.

Advanced search button is placed under the "Search" button (Figure 21).

Pristupanje portalu meta.baektel.eu za naprednu pretragu je dato na Slika 20.

Ispod linka/dugmeta "Search", nalazi se link za naprednu pretragu (Slika 21).
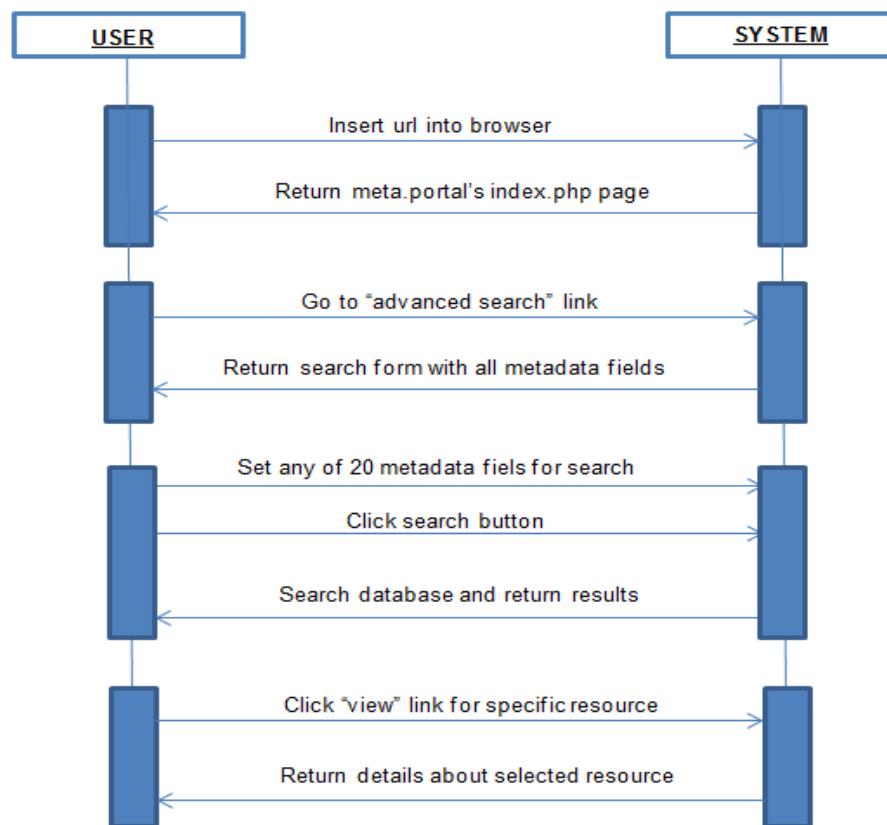
Figure 20 Advances search scenario   **Slika 20 Scenario napredne pretrage**

Figure 21 Advances search

Slika 21 Napredna pretraga

Into the Advanced search form, the user can insert any metadata value that they need for search. (Figure 22)

U formu za naprednu pretragu, korisnik unosi bilo koju vrednost metapodatka koji mu je potreban za pretragu. (Slika 22)

All fields	geomodelovanje

Global Fields

Resource ID(s)	
By date	Any year ▼ Any month ▼ Any day ▼
Title	ArcGIS
Type	☑ Best practice ☐ Exercise ☐ Lesson ☐ Brief ☐ Case study ☑ Guidelines ☐ Portal ☐ Evaluation tehniques
Subject	
Creator	Ranka Stankovic
Contributor	Olivera Kitanovic
Publisher	Faculty of Mining and Geology

Figure 22 Data entry

Slika 22 Unos podataka

The system returns every resource or course that matches given criteria (Figure 23).

Sistem vraća svaki resurs ili kurs koji odgovara zadatim kriterijumima (Slika 23).

Figure 23   **Slika 23**

By clicking on the "View" link, the user gets detailed information about the course/resource. (Figure 24)

Pristupom linku "View", dobijaju se detaljni podaci o kursu/resursu. (Slika 24)

Figure 24 OER metadata   **Slika 24 Metapodaci o otvorenom resursu**

5 Export/Import edX course

In compliance with the architecture of the BAEKTEL platform, described in Dev 2.3 and Dev 3.1, development of OER takes place within developmental edX nodes, while the final version of evaluated courses is published on the production edX node, and then described by metadata. This section describes the procedures for export and import of courses, and their final publication.

EDX course export is available on http://edx.baektel.eu:18010 url (navigate in menu to Tools ->Export() (Figure 25)

Saglasno arhitekturi BAEKTEL platforme opisane u Dev 2.3 i Dev 3.1 razvoj otvorenih resursa se odvija na razvojnim edX čvorovima, dok se finalno publikovanje evaluiranih kurseva postavlja na centralni edX čvor i potom opisuje metapodacima. U ovom odeljku je opisan postupak kojim se vrše eksport i import kurseva, odnosno njihovo finalno publikovanje.

Eksport kursa je dostupan na adresi http://edx.baektel.eu:18010 (meni-u Tools->Export () (Slika 25).
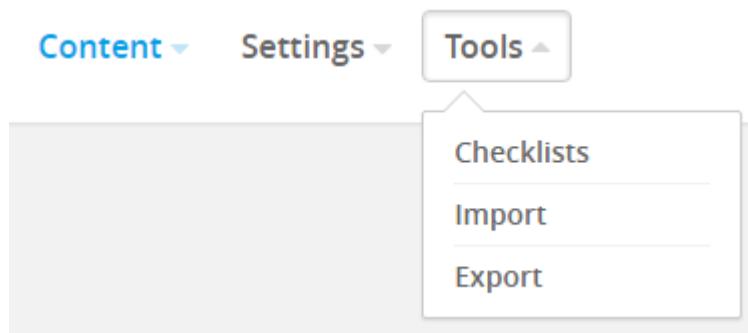
**Figure 25**

Slika 25

When importing a new course to the edX platform, it is necessary to create a new empty course on url http://edx.baektel.eu:18010 by clicking on [+ New Course] button.

The user must enter the course title, University, course number, which must contain the user's institution prefix and the serial number for that institution. This number must be unique. Also, it is necessary to fill the Course Run field. (Figure 26)

Prilikom uvoza novih kurseva na edX platformu potrebno je kreirati prazan novi kurs na adresi http://edx.baektel.eu:18010 klikom na dugme [+ New Course].

Prilikom kreiranja kursa potrebno je uneti naziv kursa, Univerzitet, broj kursa, koji mora da sadrži prefiks institucije i redni broj kursa za tu instituciju. Ovaj broj mora biti jedinstven Takođe, potrebno je popuniti polje Course Run. (Slika 26)

Studio Home

Create a New Course

Course Name *

ArcGis

The public display name for your course. This cannot be changed, but you can set a different display name in Advanced Settings later.

Organization *

UB

The name of the organization sponsoring the course. **Note: This is part of your course URL, so no spaces or special characters are allowed.** This cannot be changed, but you can set a different display name in Advanced Settings later.

Course Number *

UB1

The unique number that identifies your course within your organization. **Note: This is part of your course URL, so no spaces or special characters are allowed and it cannot be changed.**

Course Run *

2015

The term in which your course will run. **Note: This is part of your course URL, so no spaces or special characters are allowed and it cannot be changed.**

CREATE   CANCEL

Figure 26   **Slika 26**

Once the new course has been created, there is an option in the Tools menu for importing the course, where the file that had been exported from the local developmental edX platform should be attached.

Kada je kreiran novi kurs u meniju Tools postoji opcija za import kursa, gde je potrebno prikačiti datoteku koju je izvezena prilikom eksporta kursa sa lokalne razvojne edX platforme.

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