http://opensciencelink.eu

Integrated OpenScienceLink Platform

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Executive Summary

This report informs the reader about the integration process and results of the OpenScienceLink Platform, as it has been developed during the first iteration of the project. It also includes information regarding the current deployment of the underlying platforms and the OpenScienceLink Platform components in the testing environment that has been set up for this purpose. Section 2 gives the overview of the initial integrated system setup. Section 3 presents per Pilot the functionalities offered in the first integrated OpenScienceLink Platform and provides a detailed usage scenario including Platform screenshots. Finally, Section 4 summarizes and concludes.

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1 Introduction

This Deliverable is the accompanying document for the first iteration of the OpenScienceLink Platform, which comprises the outcome of the work held in WP5, and more specifically in Tasks 5.1-5.3. The document provides information regarding the deployment of the underlying platforms as well as the various services and components enabling the OpenScienceLink platform functionality and integration with the existing platforms. It further presents a scenario-driven walkthrough including screenshots of the implemented functionalities per Pilot, providing in depth explanation of the Platform capabilities.

2 OpenScienceLink Platform set up

2.1 The Integrated Platforms

The OpenScienceLink Platform uses and integrates functionalities from a number of underlying existing platforms. The project partners NTUA, TUD and TI host and expose the different existing Platforms or parts thereof, and services as follows.

NTUA hosts the SocIoS and +Spaces platforms, services and applications, as well as a part of the PONTE services and applications. Another part of the PONTE services is hosted by TUD and TI, who also host the GoPubMed services and applications.

The NTUA **PONTE** services and applications are hosted in a Microsoft Windows server machine and PONTE deployed in an Apache Tomcat server version 7.027, running Java 1.6, while a D2R server along with MySQL and Neo4j database servers also used. In specific, the following PONTE services and applications are hosted and provided by NTUA.

Name	Location
PONTE Web Application	http://147.102.33.126:8080/Pat/
PONTE Predefined Queries as a Service	http://ponte.grid.ece.ntua.gr:8080/PonteDecisionSupport/predqueries?wsdl
PONTE Semantic Mapper Service	http://ponte.grid.ece.ntua.gr:8080/PonteDecisionSupport/semanticMapper?wsdl

The NTUA **SocIoS** services are hosted in an Ubuntu Linux machine and deployed in Glassfish server version 3.1, running Java 1.6, while a MySQL database server is also used.

Name	Location
Socios API Service	http://147.102.19.246:9090/sociosApi/SociosApiImpl?wsdl

The NTUA **+Spaces** server is an Ubuntu Linux Virtual Machine (VM) hosted in the ~Okeanos Greek Academic Community IaaS Cloud provider. The +Spaces services are deployed in Glassfish server version 3.1, running Java 1.6, while a MySQL database server is also used.

Name	Location
+Spaces Web Application	http://snf-79794.vm.okeanos.grnet.gr/pspaces/index.aspx

TUD and TI host the GoPubMed services and applications, as well as a part of the PONTE services and applications.

Name	Location
GoPubMed Applications	http://gopubmed.org/web/gopubmed/

2.2 Platform Set up

The OpenScienceLink Platform implements the basic models and functionalities regarding User Management, Dataset Management (Upload/Storage), Review Management, Author Management, Groups Management. To persist the OpenScienceLink specific data a MySQL Database is used, as well as a distributed, failover enabled filesystem to ensure the scalability with regard to the number and size of the dataset and article data. The functionalities are accessible through a Web Interface. These services and components are hosted by TUD and TI.

Name	Location
OpenScienceLink Platform Web Application	https://www.gopubmed.org/web/oslplatform/ (After the official release, the platform will be hosted at: http://opensciencelink.org)

The OpenScienceLink Platform also makes use of a number of external services and adaptors to enable its integration with the existing platforms mentioned in Section 2.1 above.

Publication search, PubMed author search, PubMed author profile retrieval, and publication quantities retrieval are implemented through service interfaces with GoPubMed. These services are hosted by TUD and TI.

Name	Location
GoPubMed search adaptors and JSON interface	http://www.gopubmed.org/web/gopubmed/json/search
GoPubMed hot topics interface	http://www.gopubmed.org/web/gopubmed/hottopics

The URL leads to a session based URL with which HTTP POST requests can be performed (e.g. http://www.gopubmed.org/web/gopubmed/20?WEB01qmq70mi1x2exI1I1I00). The request uses the parameter JSON to get the input data. The input data is a JSON object containing the method name as key and the parameter list as value. The API methods and their parameters are available by calling the session based URL without the parameter:

```
{"api":{
    //main functionalities
    "search":["String0","int1"],
    "tree":["List0","int1"],

    //query manipulation
    "notRequireTerm":["String0"],
    "requireTerm":["String0"],
    "resetTerm":["String0"],
    "setSelectedTerm":["String0"],
    "getQueryString":[],

    "getDocumentsOnPage":["int0"],
    "getAllResultDocumentIds":[],
    "getResultDocumentIds":[],
    "getSearchInfo":[],
    "getSnippetDocumentsOnPage":["int0"],
    "getTerms":["List0"],
```

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```
"intersectWithIds":["List0"],
"statistics":[],
"annotatedDocuments":["String0"]}}
```

The requests are able to perform semantic searches with the MeSH taxonomy, retrieve result document counts and hierarchy information on the annotated MeSH terms, Journals, Publication Dates, Affiliations, as well as receive PubMed citation contents.

To enable a fast number-of-publication-based analysis of MeSH terms, there is a further service with which tabular PubMed citation count information can be displayed. This service has two parameters, q and namespace:

q: the query for which the tabular data will be received. Any query can be used that is valid for GoPubMed.

namespace: one of the value "geo", "journal", "author", "mesh" to receive the GoPubMed based counts for the corresponding group of entities.

For the purposes of linking OpenScienceLink user profiles to social platform user profiles and retrieving other data from social networking platforms, as required for the OpenScienceLink purposes, the services of the SocIoS platform are used by means of the appropriate adaptors. These services and applications are developed and hosted by NTUA for the purposes of OpenScienceLink Platform integration.

The **Social Network Adaptor (SNA)** service is hosted in a Microsoft Windows server machine, and deployed in an Apache Tomcat server, running Java 1.6. The services are also deployed on a Windows Virtual Machine hosted by the ~Okeanos Greek Academic Community IaaS Cloud provider, which is however not constantly available due to infrastructure problems that the provider is facing.

Name	Location
Social Network Adaptor service	http:// 147.102.19.246:8080/OSL/SocNetAdaptor?wsdl http://83.212.103.227:8282/OSL/SocNetAdaptor?wsdl
Social Network Adaptor demo Web application	http:// 147.102.19.246:8080/SocNetAdaptorApp/

3 OpenScienceLink Platform step by step

The following paragraphs present the functionalities offered by the first iteration of the OpenScienceLink Platform, in a per Pilot basis. For some Pilots more functionalities have already been implemented but not been integrated with the Platform yet.

In this first version of the document, the integrated functionalities are first listed briefly, and then presented in a scenario-driven manner, according to which a female user of the Platform, named Margaret, who possesses the rights to access different functionalities of the Platform regardless of the user role they are intended for, interacts with the Platform in a logical sequence, in order to perform specific tasks.

3.1 All Pilots: Common Functionalities used throughout the Pilots

This section presents the functionalities which are common across more than one Pilot of the OpenScienceLink Platform.

3.1.1 Functionalities
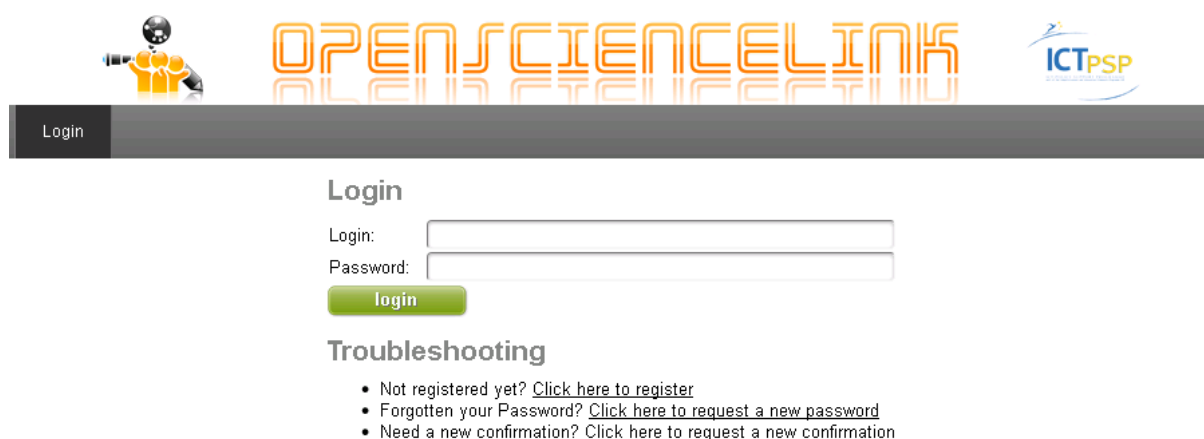
Table 1 below presents the common functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F0.1	User registration and profile	F_PR1.1, F_PR2.2, F_PR2.3, F_PR2.24, F_PR4.16, F_PR5.9, F_PR5.10
F0.2	User log-in	F_PR2.1
F0.3	Research work semantic linking	F_PR1.6, F_PR1.24, F_PR2.9

Table 1: Common functionalities implemented

3.1.2 Scenario of use

In order to access the OpenScienceLink Platform, Margaret navigates to the OpenScienceLink Web interface by typing the Platform URL into the address bar of her Web browser. She is directed to the starting page of the Platform, i.e. the Login page (Figure 1).

Figure 1: Login page

D5.1.1 Integrated OpenScienceLink Platform

Please provide some information about your scientific interests. The information you provide is used only for the OpenScienceLinkPlatform services and will not be shared with third parties.

Please provide also your email address, because it is necessary to confirm your registration. **The email address will also be your login name.** After you entered your registration, we will send you an email containing a confirmation link. Follow this link to finish your registration. You will be asked to enter your password

Personal information

First name: [＿＿＿＿＿＿]   *
Surname: [＿＿＿＿＿＿]   *
Email address: [＿＿＿＿＿＿]   *
Password: [＿＿＿＿＿＿]   * (minimum 8 Characters)
Confirm Password: [＿＿＿＿＿＿]   *

* fields are required

Professional information

☐ Enable Editor Privileges
Institution: [＿＿＿＿＿＿] *
Type of Institution: [-Select- ▼]
Job: [-Select- ▼]
Country: [-Select- ▼]

* fields are required

Favorite research topics

Select your favorite research topics from the background-knowledge

☐ M Allergy and Immunology   ☐ M Genetics   ☐ M Peptides
☐ M Biological Markers   ☐ M Genomics   ☐ M Proteomics
☐ M Cardiovascular Diseases   ☐ M Health Care   ☐ M Sequence Analysis
☐ M Clinical Trials as Topic   ☐ M Metabolic Networks and Pathways   ☐ M Systems Biology
☐ M Computational Biology   ☐ M Microbiology   ☐ M Toxicology
☐ M Developmental Biology   ☐ M Molecular Biology   ☐ M Virology
☐ M Epigenesis, Genetic   ☐ M Neoplasms
☐ M Gene Regulatory Networks   ☐ M Neurobiology

step 1 of 3 ...

sign up

Back to the OpenScienceLink Plattform

Figure 2: User registration – Step 1

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Users are always redirected to the Login page whenever they try to access a feature of the Platform without having priory logged in, or after an extended period of inactivity.

On top of the Login page (as is the case with all Web pages of the Platform) the OpenScienceLink logos are displayed. Underneath that, resides the login form, where users can input their OpenScienceLink credentials (Login name and Password) in order to access the Platform.

Margaret has never before used the OpenScienceLink Platform, thus she first has to register at the Platform in order to be able to access its offered functionality. Below the login form, there is a troubleshooting area, where she sees the message "Not registered yet?". She subsequently clicks on the link "Click here to register" and the Platform guides her through a simple registration process consisting of three basic steps.

In the first step of registration (Figure 2), Margaret is prompted to provide some personal, professional and research information in a purpose-built form. She first fills in the personal information area, by giving her first and last name, as well as her email address, which will be used in a next step in order to confirm her registration. The email address will also be her login name at the Platform. She further inputs her wished password, to be used for accessing the Platform.

In the professional information area, she provides the details of the Institution she is affiliated with along with its type and country, as well as her job position. She can choose among several predefined institution types (Academia, Biotech industry, Clinic research organization, Government, Hospital, Pharmaceutical industry, Science/health consultant, Other), and job positions (Business development, Clinical trials manager, healthcare professional, IT professional, Librarian, Management, Medical Doctor, Post graduate student, Principal investigator, Product manager, Professor, Research group leader, Research technician, Undergraduate student, Other). Additionally, Margaret selects the "Enable Editor Privileges" checkbox, which allows her to access the Platform's functionality intended to users of the role "Editor".

In the favorite research topics area she can select her research topics of interest from the background knowledge, stemming from the mesh ontology. The selected topics are automatically linked to her profile and can be retrieved by the Platform whenever there is the need for provision of automated user-specific functionality.

By clicking the sign up button, Margaret's details are stored and the registration proceeds to the second step (Figure 3). At this step, the Platform sends an email to the previously provided address, which contains a confirmation link.

Please Confirm your Registration!

Thank you for your registration, within a few moments you will receive a confirmation link via email.
Please follow the given instructions and click the confirmation link to finish your registration.

In case you did not receive the confirmation in short order, please click the following link: Request a new Confirmation

step 2 of 3 ...

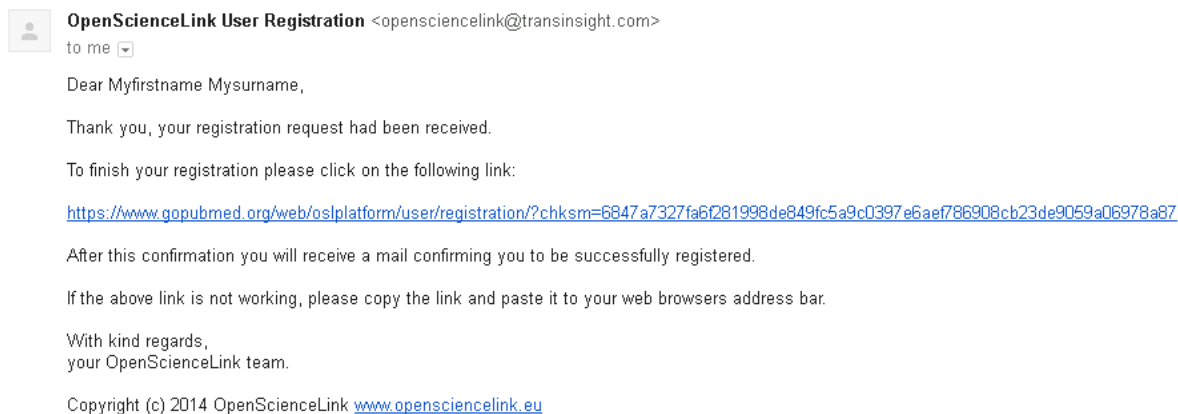Back to OpenScienceLink

Figure 3: User registration – Step 2

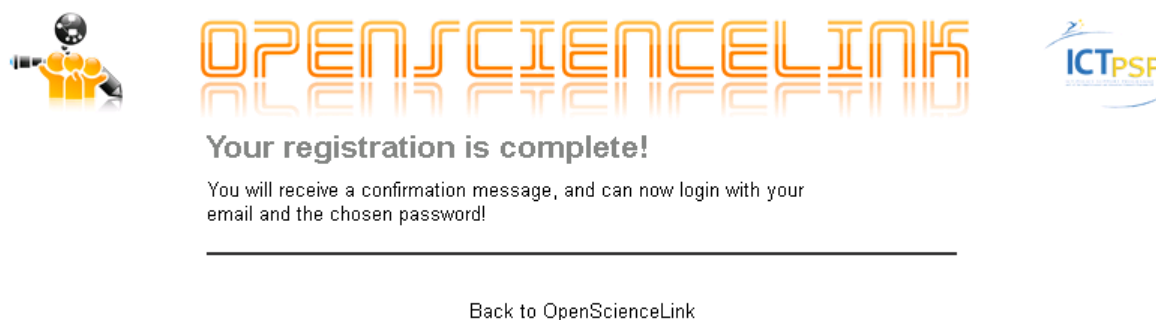D5.1.1 Integrated OpenScienceLink Platform

Margaret checks shortly her mailbox, and sees a new email from the OpenScienceLink Platform (Figure 4). She opens it and clicks on the confirmation link.

OpenScienceLink: Confirm registration

OpenScienceLink User Registration <opensciencelink@transinsight.com>
to me ▾

Dear Myfirstname Mysurname,

Thank you, your registration request had been received.

To finish your registration please click on the following link:

https://www.gopubmed.org/web/oslplatform/user/registration/?chksm=6847a7327fa6f281998de849fc5a9c0397e6aef786908cb23de9059a06978a87

After this confirmation you will receive a mail confirming you to be successfully registered.

If the above link is not working, please copy the link and paste it to your web browsers address bar.

With kind regards,
your OpenScienceLink team.

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Figure 4: Confirmation e-mail

A new page opens on her Web browser, informing her that her OpenScienceLink registration has been completed (Figure 5).

Your registration is complete!
You will receive a confirmation message, and can now login with your email and the chosen password!

Back to OpenScienceLink

Figure 5: User registration – Step 3

Margaret notices that at the same time she received another message in her mailbox (Figure 6), informing her about the successful registration in the OpenScienceLink Platform, and providing her with some basic directions for logging in the Platform.

By clicking on the login link provided in the email, Margaret now navigates to the Login page (Figure 1) and inputs her Login name and Password in the form. She clicks on the login button, but receives an error message from the Platform (Figure 7). She tries a couple more times and immediately realizes that she has already forgotten her password.

Directly below, on the troubleshooting section, she sees the message "Forgotten your Password?" and finds the answer to her problem. She clicks on the link "Click here to request a new password", fills in her login information in the relevant form and follows a predefined procedure for resetting her password. She further notices that there is also another link provided, for requesting a new confirmation in case the initial confirmation email (Figure 4) never reached the new user's mailbox.

Now that her password has been reset, Margaret once more inputs her login details in the form and clicks the login button. She is authenticated successfully and can finally access the OpenScienceLink Platform functionality.

D5.1.1 Integrated OpenScienceLink Platform
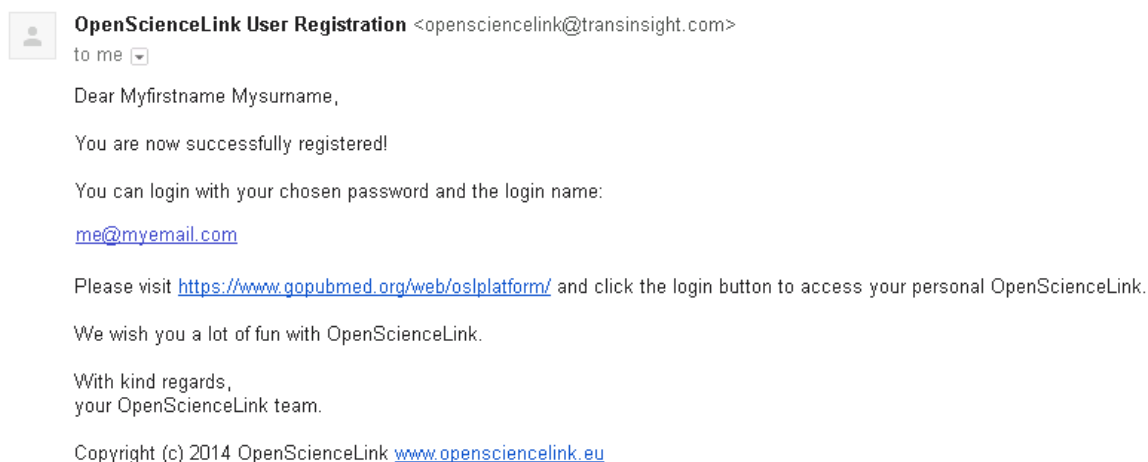
Figure 6: Successful registration email
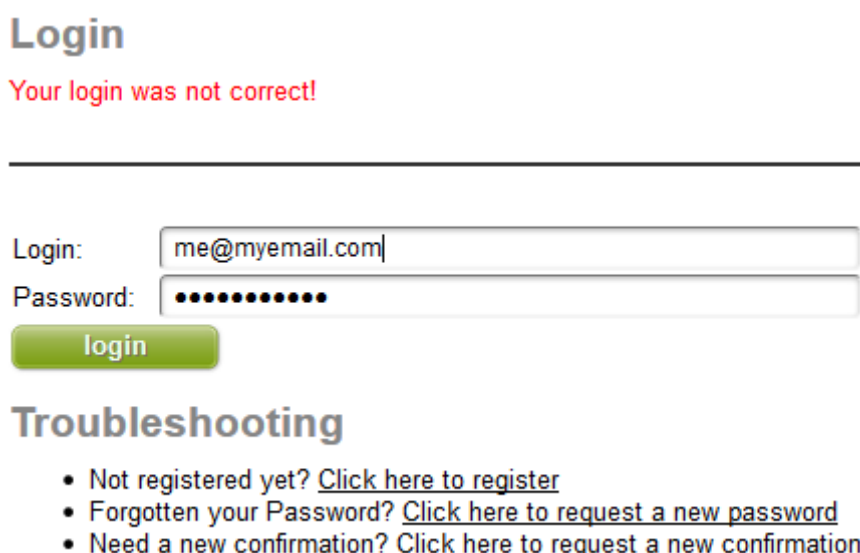
Figure 7: Failed login

Entering the OpenScienceLink Platform, Margaret observes that all of the main functionality is arranged on a horizontal menu (Figure 8) right below the OpenScienceLink logos, and organized in a scenario-driven (per-Pilot) manner.

Figure 8: Main menu

By selecting My Profile from the menu, the My Profile tab (Figure 9) is loaded, where she can edit all the personal and professional information she initially gave during registration, as well as change her research topics of interest. Now it is a good time to also change her reset password into something that she can remember more easily (hopefully). She inputs her new password twice and clicks on the submit button. The changes are saved.

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Personal information

Email address: me@myemail.com
Forename: [Myfirstname] *
Surname: [Mysurname] *
Password: [ ] * (minimum 8 Characters)
Confirm Password: [ ] *

* fields are required

Professional information

☑ Enable Editor Privileges
Institution: [Myinstitution] *
Type of Institution: [Academia ▼]
Country: [Angola ▼]
Job: [IT professional ▼]

* fields are required

Research topics

Select your research topics from the background-knowledge

☐Ⓜ Allergy and Immunology	☐Ⓜ Genetics	☐Ⓜ Peptides
☐Ⓜ Biological Markers	☐Ⓜ Genomics	☐Ⓜ Proteomics
☑Ⓜ Cardiovascular Diseases	☐Ⓜ Health Care	☐Ⓜ Sequence Analysis
☐Ⓜ Clinical Trials as Topic	☑Ⓜ Metabolic Networks and Pathways	☐Ⓜ Systems Biology
☐Ⓜ Computational Biology	☐Ⓜ Microbiology	☐Ⓜ Toxicology
☐Ⓜ Developmental Biology	☐Ⓜ Molecular Biology	☐Ⓜ Virology
☐Ⓜ Epigenesis, Genetic	☐Ⓜ Neoplasms	
☐Ⓜ Gene Regulatory Networks	☐Ⓜ Neurobiology	

[submit]

Figure 9: My profile

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3.2 Pilot 1: Research Dynamics-aware Open Access Data Journals Development

3.2.1 Functionalities

Table 2 below presents the Pilot 1 functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F1.2	Dataset with metadata submission	F_PR1.3
F2.1, F2.2, F2.3, F2.4, F2.5	Relevant reviewers identification	F_PR1.8, F_PR1.13

Table 2: Pilot 1 functionalities implemented

3.2.2 Scenario of use

Margaret selects the My Datasets tab from the menu (Figure 8), which loads the My Datasets page (Figure 10). So far, she has not uploaded any datasets to the Platform, thus this page is empty, with the exception of the upload dataset button. She clicks on that button and the upload dataset page loads (Figure 11).

Figure 10: My datasets

In this page, she is prompted to input all the dataset related information in a form. This information includes the dataset owner's name, affiliation and email, as well as the dataset's name and description, and the call/venue which it is intended for. She decides to name it "My first dataset".

She further is able to provide a number of keywords for describing the dataset's main fields and research topics. She starts typing a keyword in the "Main fields" field and the Platform automatically provides auto-complete text suggestions stemming from the Mesh ontology (Figure 12). Margaret selects a Mesh term that accurately describes one of the dataset's main fields and clicks the "add keyword" button. The term is added as a keyword for this particular field. She then adds another keyword in the same manner. By following the same procedure she

also fills in the "Research Tags" field. She can delete any of the given keywords by clicking the red "X" next to the term she wishes to remove (Figure 13).

Margaret can also specify a list of papers in which the dataset has been used.

Then, she is given the choice to check or not two checkboxes, i.e. "I accept the Terms and Conditions" and "I wish the dataset to be reviewed and published". Both checkboxes are self-explanatory, while in the case of the first, clicking on the "Terms and Conditions" part of the text brings up the OpenScienceLink Platform legal terms and conditions regarding datasets.

Margaret checks the first checkbox in order to verify that she has taken knowledge of the Terms and Conditions of the OpenScienceLink Platform before uploading the dataset. In case this checkbox is not checked, the Platform does not accept the uploaded of the dataset.

She also checks the second checkbox so that her uploaded dataset will be reviewed and considered for publication in the previously specified call/venue.

My Datasets

User:	**Myfirstname Mysurname**
Owners Name:	Ownersname
Owners Affiliation:	Ownersaffiliation
Owners E-mail:	Ownersemail
Dataset Name:	My first dataset
Description:	Heart disease experiment thyroid hormone on mice
Call/Venue Name:	Venuename
Main Fields:	Add Keyword
Research Tags:	Add Keyword
Papers where the dataset was used:	Papers

☑ I accept the Terms and Conditions.
☑ I wish the dataset to be reviewed and published.

Article path: Browse…   No file selected.
Dataset path: Browse…   No file selected.
or provide a URL:

Cancel Changes | Save Changes

Figure 11: Upload dataset

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Figure 12: Auto-complete

Figure 13: Add and remove keywords

Then she clicks the "browse" button in order to choose the file of the dataset (compressed zip file format) and optionally the accompanying article (PDF file format) on her personal computer and upload them to the Platform (Figure 14). Optionally she can provide the URL of a file residing in the World Wide Web.

Figure 14: Upload files

Finally, she clicks "Save changes" and her dataset is saved in the OpenScienceLink Platform. A relevant message notifies her of the successful completion of this task (Figure 15).

Figure 15: Successful dataset submission

By clicking the "Close" button, Margaret is redirected to her My Datasets page. After uploading a couple of more datasets, which she names "My new dataset" and "My other dataset", her My Datasets page looks like on Figure 16.

My Datasets

Datasets uploaded by: **Myfirstname Mysurname**

[Upload Dataset]

Dataset Name	Article	Dataset	Dataset URL	State	Last Update	Operations
My other dataset	download	download		Waiting for review	2014-03-17 22:52	[Edit]
My new dataset	download	download		Uploaded	2014-03-17 22:52	[Edit] [Delete]
My first dataset	download	download		Waiting for review	2014-03-17 22:51	[Edit]

Figure 16: My datasets populated

Margaret notices that she is able to edit the datasets she has uploaded so far, but is only able to delete "My new dataset", which she did not specify to be reviewable and considered for publication.

3.3 Pilot 2: Novel open, semantically-assisted peer review process

3.3.1 Functionalities

Table 3 below presents the Pilot 2 functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F2.2	Relevant reviewers identification through literature	F_PR2.10
F2.4	Reviewer pool suggestion	F_PR2.10
F2.5	Reviewer selection and invitation	F_PR2.4

Table 3: Pilot 2 functionalities implemented

3.3.2 Scenario of use

Margaret selects the My Review Calls tab from the menu (Figure 8), which loads the My Review Calls page (Figure 17Figure 10). Since she has not created a review call yet, the page is empty, with the exception of the "Upload for Review" button. She clicks on that button and the Create review call page loads (Figure 18).

Review Calls

Upload For Review

Figure 17: Review calls

In the Create review call page, Margaret can specify the details of the review call to be created for a specific article. She specifies the venue and the review deadline, as well as the article's title. She additionally writes a short abstract which describes the article in more detail. Then, she adds one by one the article's authors by using the "Add Author" button. She can remove an author by clicking the red "X" button, next to the author's name. In the Keywords/Tags field, she can specify a list of relevant keywords. This can be done either a) manually: She starts typing a keyword and the Platform helps her by auto-completing the text with terms stemming from the Mesh ontology and clicks the "Add Keyword" button in order to add the keyword in the list, or b) automatically: She just clicks the "Suggest Keywords" button and the Platform automatically processes the previously provided title and abstract in order to extract Mesh terms from these texts, and add them in the keywords list. In the specific example, the Platform automatically identifies the terms "Biology", Data Mining", "Knowledge" and "Molecular Biology" (Figure 19). Margaret can remove keywords from the suggestions list by pressing the red "X" next to the keyword she wishes to be removed.

Create Review Call

Venue:	Myvenue
Review Deadline:	14/04/2014
Title:	Biological Knowledge Discovery and Data Mining
Abstract:	With the development of Molecular Biology during the last decades, we are witnessing an exponential growth of both the volume and the complexity of biological data.
Authors:	✗ First Author ✗ Second Author Third Author Add Author
Keywords/Tags:	Suggest Keywords Add Keyword
Upload Article:	Browse… No file selected.

Next >>

Figure 18: Create review call

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Suggest Keywords

Keywords/Tags
✗ Ⓜ Biology
✗ Ⓜ Data Mining
✗ Ⓜ Knowledge
✗ Ⓜ Molecular Biology

Add Keyword

Figure 19: Suggest keywords

Create Review Call

Venue	Myvenue
Review Deadline	14/04/2014
Title	**Biological Knowledge Discovery and Data Mining**
Abstract	With the development of Molecular Biology during the last decades, we are witnessing an exponential growth of both the volume and the complexity of biological data.
Authors	First Author; Second Author; Third Author
Keywords	Ⓜ Biology; Ⓜ Data Mining; Ⓜ Knowledge; Ⓜ Molecular Biology

---

Find Potential Reviewers

✗ Ⓜ Biology
✗ Ⓜ Data Mining
✗ Ⓜ Knowledge
✗ Ⓜ Molecular Biology

Add Keyword

Find Authors

Page **1** 2 3

	Reviewer Name	Affiliation	Homepage	OSL Profile	Keywords
☑	Visweswaran S				
☑	Artés-Rodríguez A				
☐	Coulet A				
☐	Garten Y				
☐	Altman R				
☐	Selvaraj S				
☑	Natarajan J				
☐	Ziegler A				
☐	Takabayashi K				
☐	Sarkar I				
☐	Diomidous M				
☐	Bellazzi R				
☐	McCray A				
☐	Madigan D				
☐	Blasco-Fontecilla H				
☐	Galfalvy H				
☐	Perez-Cruz F				
☐	Burns G				
☐	Chatr-Aryamontri A				
☐	Wu C				

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<< Back   Invite Selected Reviewers

Figure 20: Select reviewers

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Finally, Margaret browses her personal computer for the article file and chooses it to be uploaded to the Platform. Then she clicks the "Next" button and is directed to the next page, where she is able to select the reviewers for this article (Figure 20).

On top of this page, Margaret is presented with a summary of the review call details, as well as the keywords specified in the previous page, which describe the specific review call and the corresponding article. On the bottom of the page, a list of authors (including their details, such as affiliation, homepage, and OSL Profile, if available) is automatically presented by the Platform. The list is created based on the keywords specified and comprises a suggestion for possible reviewers for the specific article. Margaret can specify additional keywords by clicking the "Add keyword" button or remove existing ones by clicking on the red "X" button next to a keyword, and notices that her actions are immediately reflected on the proposed reviewers list. However, making keyword changes at this stage does not affect the initial list of keywords specified for the article.

Then, Margaret selects three reviewers form the list, which she wishes to invite to review the specific article, clicks the "Invite selected reviewers button and is redirected to the reviewers invitation page (Figure 21).

Figure 21: Invite reviewer

This page allows Margaret to edit and submit to the selected reviewers an e-mail invitation for reviewing the specific article. The text body is automatically created by the Platform based on a template, and Margaret is able to edit it, as well as the reviewers name and e-mail address, before sending the invitation. By clicking the "Invite this reviewer" button, the Platform submits

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the invitation to the reviewer. This step is repeated for each of the authors selected from the previous list.

3.4 Pilot 3: Data mining for Biomedical and Clinical Research Trends Detection and Analysis

3.4.1 Functionalities

Table 4 below presents the Pilot 3 functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F3.1	Trend detection	F_PR3.1, F_PR3.4
F3.2	Trend analysis	F_PR3.2, F_PR3.4, F_PR3.6

Table 4: Pilot 3 functionalities implemented

3.4.2 Scenario of use

Margaret wishes to assess trend information regarding a specific research topic that she is interested in. She selects the Trends tab from the menu (Figure 8), which loads the Trends page. In the provided search field, Margaret specifies the term that she is interested in, namely "Endosome". She starts typing a word and the Platform proposes auto-completion options for her text, based on relevant terms stemming from the Mesh ontology. She can also specify any combination of keywords (Mesh or not) to search the trends for.

She then clicks on the "Show trend graph" button and the Platform starts processing the provided keyword(s) (Figure 22).

Figure 22: Trend search

The Platform analyzes the underlying data sources and a few seconds thereafter the trend search results are retrieved and displayed on the same page, in a user-friendly graphical manner (Figure 23).

The graph presents the number of published articles dealing with the specific scientific topics per year, arranged in chronological order, which also includes an estimated number for the current year. It also shows the relative research interest per year. These values are used in order to create a sweep, which is then smoothed. From the form of the sweep, Margaret can make some presumptions regarding the trendiness of the specific research topic.
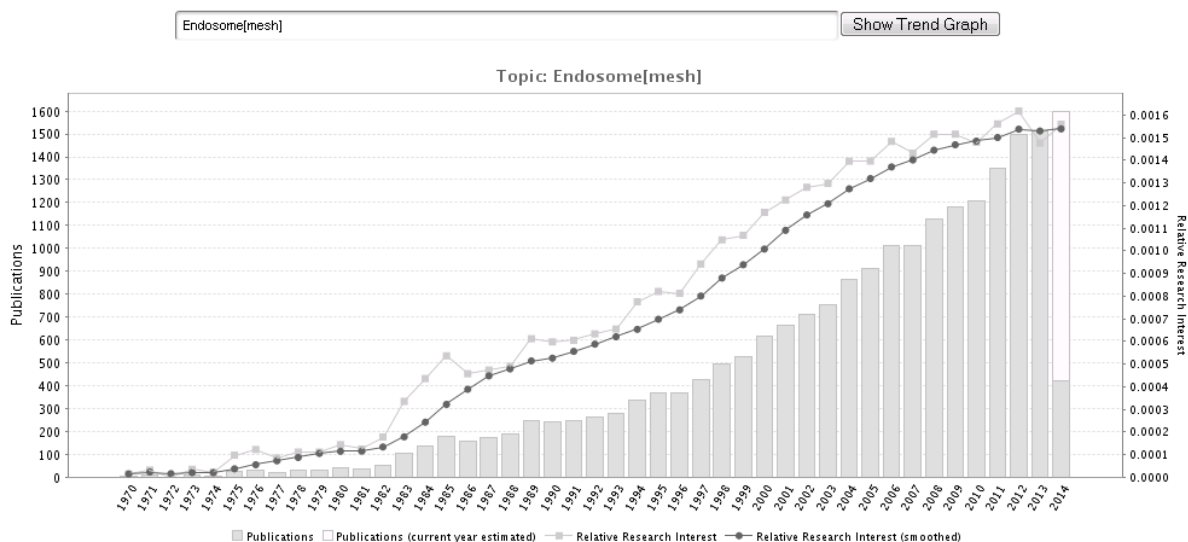
Figure 23: Trend search results

3.5 Pilot 4: Data mining for proactive formulation of scientific collaborations

3.5.1 Functionalities

Table 5 below presents the Pilot 4 functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F4.2	Researchers connections identification through literature	F_PR4.1, F_PR4.3

Table 5: Pilot 4 functionalities implemented

3.5.2 Scenario of use

Margaret selects the Collaborations tab from the menu (Figure 8), which loads the Collaborations page (Figure 24). In the provided search field, Margaret specifies again a research term that she is interested in, namely "Endosome". She starts typing a word and the Platform proposes auto-completion options for her text, based on relevant terms stemming from the Mesh ontology. She can also specify any combination of keywords (Mesh or not) to search collaborations for.

She then clicks the "Show Collaborations" button and the Platform starts processing the available publications. After a few seconds, Margaret is presented with the resulting collaborations graph for the scientific field described by the keywords specified. Each ellipse (or node) of the graph represents an author, while the lines (or edges) that connect different nodes represent collaborations. The level of collaboration (i.e. how many times two authors have collaborated with one another) is represented by the type and thickness of the connecting line, as explained in the provided legend, which is to be seen directly below the collaborations graph.

Based on the information provided by the Platform, Margaret can find new potential collaborators in her specific scientific field of interest, who have already collaborated with other authors she is acquainted with. Thus it would be easier for her to seek collaboration with them through their common connection.
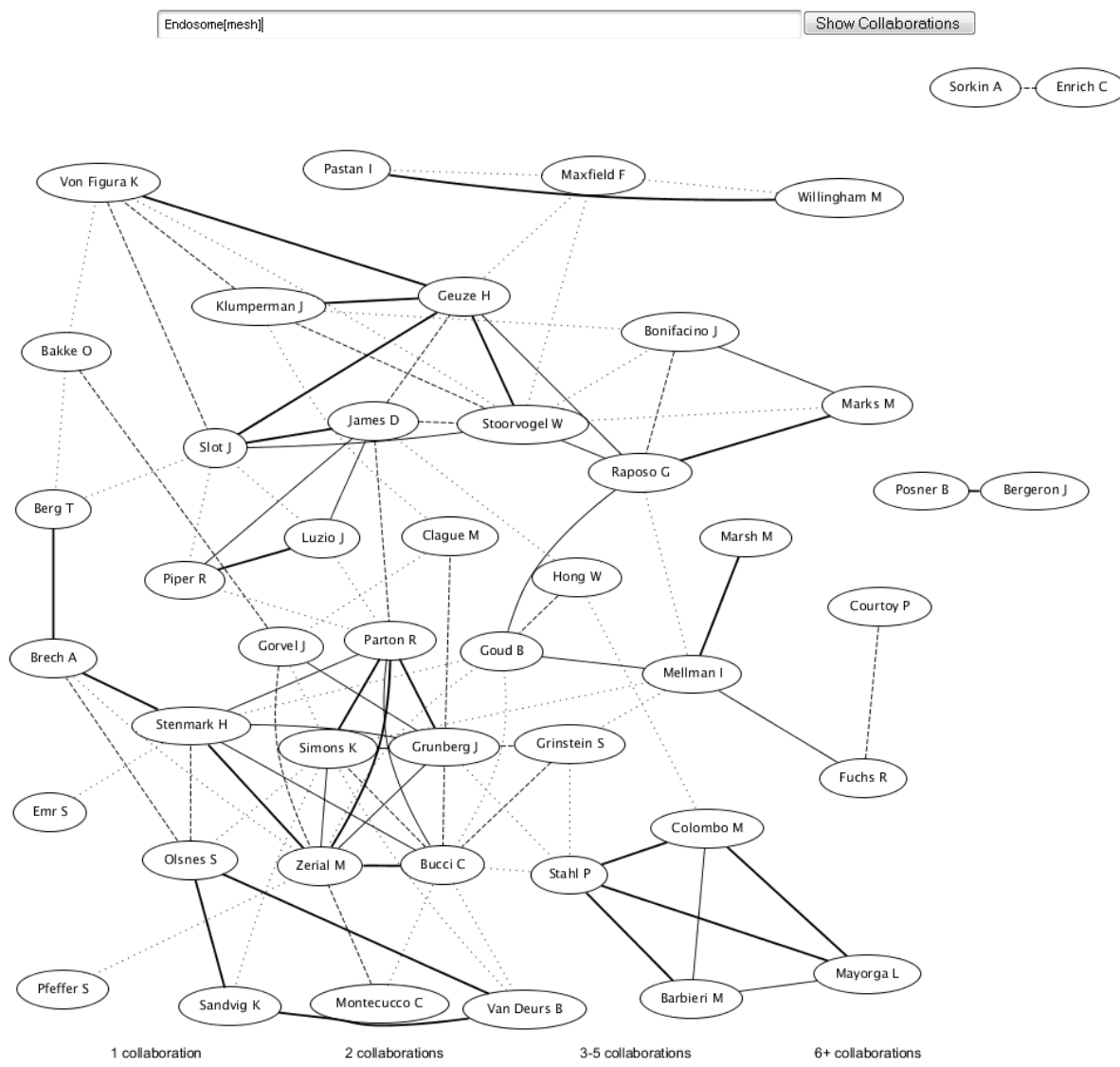
Figure 24: Collaborations search

3.6 Pilot 5: Scientific Field-aware, Productivity and Impact-oriented Enhanced Research Evaluation Services

3.6.1 Functionalities

Table 6 below presents the Pilot 4 functionalities, among the ones identified in deliverable D3.1, that were implemented at the first iteration of the OpenScienceLink Platform, along with the relevant Pilot requirements as elicited in deliverable D2.1.

F-ID	Functionality	Relevant Pilot requirements IDs
F5.7	Researcher evaluation	F_PR5.1, F_PR5.5, F_PR5.6, F_PR5.7, F_PR5.8, F_PR5.9, F_PR5.11, F_PR5.13
F5.10	Journal evaluation	F_PR5.1, F_PR5.5, F_PR5.6, F_PR5.7, F_PR5.8, F_PR5.10, F_PR5.11, F_PR5.13
F5.13	Country evaluation per domain	F_PR5.4, F_PR5.5, F_PR5.8

Table 6: Pilot 5 functionalities implemented

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3.6.2 Scenario of use

Margaret selects the Evaluation tab from the menu (Figure 8), which loads the Evaluation page (Figure 25). In the provided search field, Margaret specifies again a research term that she is interested in, namely "Endosome".
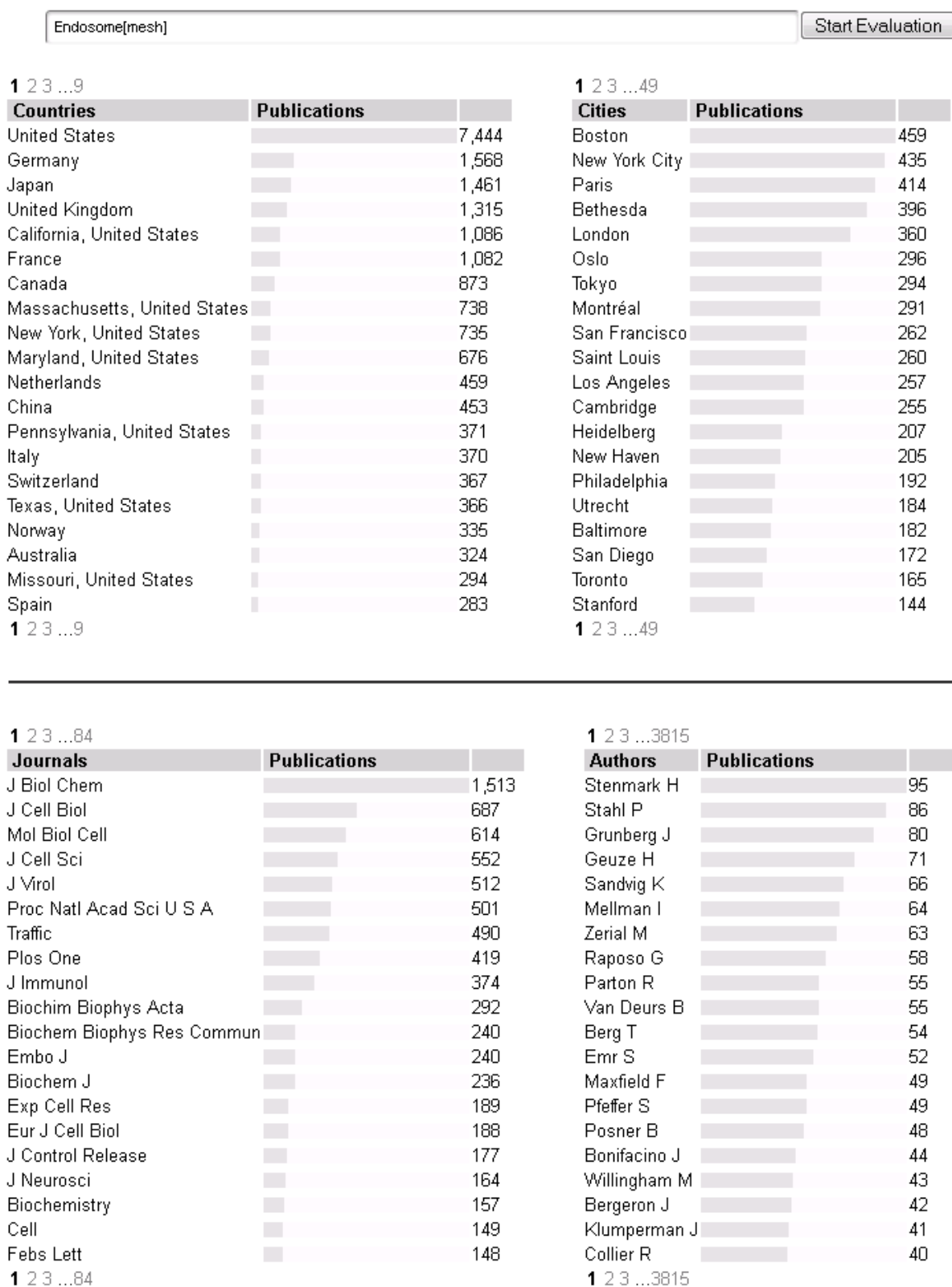
| Endosome[mesh] | Start Evaluation |

1 2 3 …9

Countries	Publications	
United States		7,444
Germany		1,568
Japan		1,461
United Kingdom		1,315
California, United States		1,086
France		1,082
Canada		873
Massachusetts, United States		738
New York, United States		735
Maryland, United States		676
Netherlands		459
China		453
Pennsylvania, United States		371
Italy		370
Switzerland		367
Texas, United States		366
Norway		335
Australia		324
Missouri, United States		294
Spain		283

1 2 3 …9

1 2 3 …49

Cities	Publications	
Boston		459
New York City		435
Paris		414
Bethesda		396
London		360
Oslo		296
Tokyo		294
Montréal		291
San Francisco		262
Saint Louis		260
Los Angeles		257
Cambridge		255
Heidelberg		207
New Haven		205
Philadelphia		192
Utrecht		184
Baltimore		182
San Diego		172
Toronto		165
Stanford		144

1 2 3 …49

1 2 3 …84

Journals	Publications	
J Biol Chem		1,513
J Cell Biol		687
Mol Biol Cell		614
J Cell Sci		552
J Virol		512
Proc Natl Acad Sci U S A		501
Traffic		490
Plos One		419
J Immunol		374
Biochim Biophys Acta		292
Biochem Biophys Res Commun		240
Embo J		240
Biochem J		236
Exp Cell Res		189
Eur J Cell Biol		188
J Control Release		177
J Neurosci		164
Biochemistry		157
Cell		149
Febs Lett		148

1 2 3 …84

1 2 3 …3815

Authors	Publications	
Stenmark H		95
Stahl P		86
Grunberg J		80
Geuze H		71
Sandvig K		66
Mellman I		64
Zerial M		63
Raposo G		58
Parton R		55
Van Deurs B		55
Berg T		54
Emr S		52
Maxfield F		49
Pfeffer S		49
Posner B		48
Bonifacino J		44
Willingham M		43
Bergeron J		42
Klumperman J		41
Collier R		40

1 2 3 …3815

Figure 25: Evaluation search

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She starts typing a word and the Platform proposes auto-completion options for her text, based on relevant terms stemming from the Mesh ontology. She can specify any combination of keywords (Mesh or not).

She then clicks the "Start Evaluation" button and the Platform starts processing the available publications. After a few seconds, Margaret is presented with the top Countries, Cities, Journals and Authors for the given scientific field. The results are presented in a graphical manner as bar charts, and are displayed in descending order. Next to each bar the corresponding numerical value is presented. Margaret can immediately assess the information regarding the most active countries and cities for the specific scientific topic(s), as well as the most relevant journals, and most active authors. The origin of the analyzed publications is additionally visualized as red dots on of a picture of the World map (Figure 26).
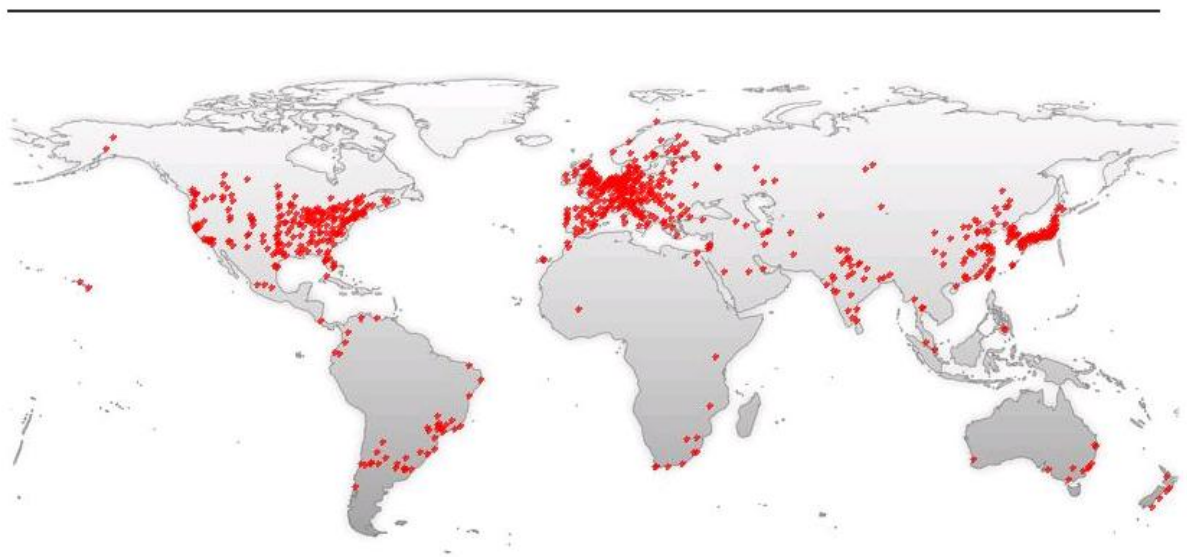
Figure 26: Evaluation map

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4 Summary and Conclusions

In this Deliverable the main functionalities of the first iteration of the OpenScienceLink Platform were presented in detail in a per pilot basis. Within the framework of WP5, apart from the presented functionality, a lot of background preparatory work was carried out in terms of the underlying platforms and services, some of which has not been incorporated in the OpenScienceLink Platform yet. The next steps are to integrate this work into the next iteration of the OpenScienceLink Platform, as well as continue working on the Platform and associated services in order to enable the functionality identified in deliverable D3.1 and cover the pilot requirements elicited in deliverable D2.1. Moreover, the evaluation feedback from the end users, which shall be reflected in the revised versions of D2.1 and D3.1, will be utilized accordingly in order to provide improvements of the implemented functionality in the next iteration of the Platform.

5 References

5.1 OpenScienceLink Documents

D2.1 – Report on Stakeholders, Main Use Cases, KPIs and Data Sources Assessment

D3.1 – Detailed Specification of OpenScienceLink Pilot Scenarios and Services