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KHRESMOI

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Final dissemination and training report

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Executive Summary

This deliverable reports on the dissemination and training activities over the whole Khresmoi project, with a focus on Khresmoi Year 4 (September 2013 – August 2014). We also present planned activity subsequent to the project. The activities are grouped according to the target groups: scientific community, medical community, business community and general public.

Year 4 has seen a similar number of scientific publications as year 3, as well as a similar number of presentations to a scientific audience as in year 3. The increased effort to bring Khresmoi to the attention of the industry is visible in the increased number of presentations to the business community. The most impressive increase is seen in the number of presentations to the medical community, in particular due to the evaluations of the Khresmoi Professional prototype at medical events. Of the total of 48 publications aimed at the scientific and medical target groups, 15 (31.3%) are in journals or edited books, while the remaining are in conference and workshop proceedings. Furthermore, 10 (20.8%) of these 48 publications are joint publications by two or more Khresmoi consortium members. More scientific output will take place after the project end, in particular through journal publications that have been submitted but are still under review.

The Khresmoi deliverables have been downloaded often from the Khresmoi website, with the deliverables related to the use cases for the general public and medical professionals (WP8) receiving particular interest during year 4. In particular, Deliverable 8.2 has been downloaded 2900 times in year 4, and a total of 4300 times since becoming available on the website in project month 19.

The activities targeted at the business and medical communities were increased in year 4. Khresmoi has been active at fairs and exhibitions in Year 4, with highlights (and their targeted community) being:

- A booth dedicated exclusively to the Khresmoi project at the CeBIT in Hannover, Germany (business community and general public);
- A booth at the European Data Forum in Athens, Greece, with a highlight being a 10 minute visit to the booth by Commissioner Neelie Kroes (scientific community and business community);
- A booth at the World of Health IT (WoHIT) in Nice, France (business community and medical community);
- A booth at the annual meeting of the Radiological Society of North America (RSNA) (medical community);
- A booth at the STAFAM, the largest congress of General Practitioners in Austria (medical community);
- A booth at multiple events organised by the Association of Physicians in Vienna (GAW) (medical community).

The Khresmoi website (<http://khresmoi.eu>) continues to be the central source of information to people external to the project, while the Khresmoi Wiki serves this purpose internally.

Over the **full duration of the project**, work in Khresmoi has led to 153 scientific publications aimed at the scientific and medical communities, of which 37 (24.2%) are published in journals or edited books. Of the 153 publications, 38 (24.8%) are joint publications with one or more Khresmoi consortium members. Khresmoi has been presented 109 times in front of a mainly scientific audience, 85 times in front of a mainly business audience, and 56 times in front of a mainly medical audience.

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1 Introduction

This deliverable reports on the dissemination and training activities over the whole Khresmoi project, with a focus on Khresmoi Year 4 (September 2013 – August 2014). We also present planned activity subsequent to the project. In order to make the document completely cover the project duration, the lists of publications, presentations, workshops, trade fairs, etc. are copied from the three previous deliverables (D11.3.1, D11.3.2, D11.3.3) into the relevant sections of this document, with the different years identified by the sub-headings *Year 1* to *Year 4*.

The activities are grouped according to the four target groups for Khresmoi dissemination, listed along with reminders of their definitions below:

- **Scientific community:** research scientists mainly working in the scientific areas covered by the Khresmoi project;
- **Medical community:** medical practitioners, including radiologists, working in medical and health care;
- **Business community:** companies of all sizes working mainly in the IT and medical IT domains;
- **General public:** all end users of search engines, particularly medical and health search engines.

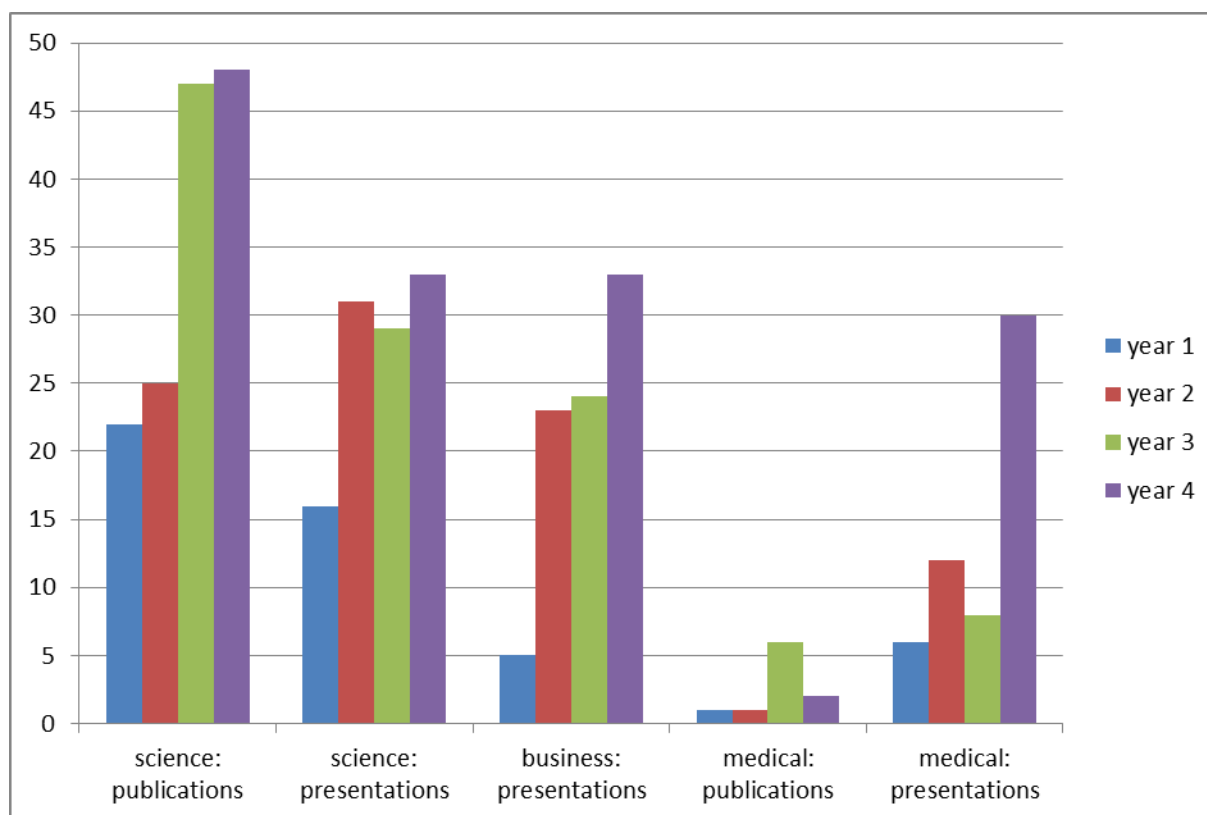
If a publication or activity is aimed at more than one target group, it is placed in the section corresponding to the main target group. Additional sections on the online presence and training activities are included.

In order to present a more coherent view of the prototypes developed in Khresmoi, it was decided early in year 3 to present three main prototypes with the following names, which continued to be heavily used in dissemination material in year 4:

- **Khresmoi for Everyone:** This prototype is aimed at the general public, and has a more classic search interface.
- **Khresmoi Professional:** The prototype with the more comprehensive ezDL interface aimed at medical professionals.
- **Khresmoi Radiology:** Full 3D image search capability is included in this prototype.

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The following graph shows a comparison between Years 1, 2, 3 and 4 of the project in terms of the number of publications and presentations aimed at the scientific, business and medical communities:



Year 4 has seen a similar number of scientific publications as year 3, as well as a similar number of presentations to a scientific audience as in year 3. The increased effort to bring Khresmoi to the attention of the industry is visible in the increased number of presentations to the business community. The most impressive increase is seen in the number of presentations to the medical community, in particular due to the evaluations of the Khresmoi Professional prototype at medical events. Of the total of 50 publications aimed at the scientific and medical target groups, 17 (34.0%) are in journals or edited books, while the remaining are in conference and workshop proceedings. Furthermore, 10 (20.0%) of these 50 publications are joint publications by two or more Khresmoi consortium members.

Over the **full duration of the project**, work in Khresmoi has led to 153 scientific publications aimed at the scientific and medical communities, of which 37 (24.2%) are published in journals or edited books. Of the 153 publications, 38 (24.8%) are joint publications with one or more Khresmoi consortium members. Khresmoi has been presented 109 times in front of a mainly scientific audience, 85 times in front of a mainly business audience, and 56 times in front of a mainly medical audience.

Khresmoi has been active at fairs and exhibitions in Year 4, with highlights (and their targeted community) being:

- A booth dedicated exclusively to the Khresmoi project at the CeBIT in Hannover, Germany (business community and general public);
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- A booth at the annual meeting of the Radiological Society of North America (RSNA) (medical community);
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- A booth at multiple events organised by the Association of Physicians in Vienna (GAW) (medical community).

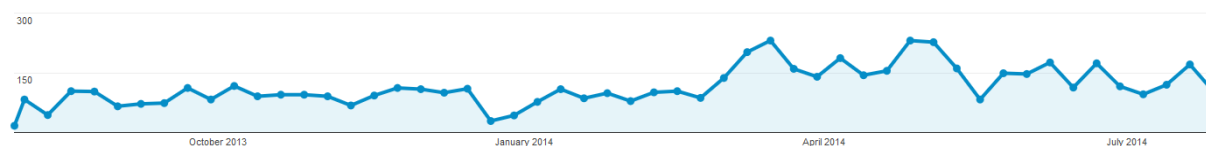
2 Online Presence

The Khresmoi website (<http://khresmoi.eu>) continues to be the central source of information to people external to the project, while the Khresmoi Wiki serves this purpose internally.

Khresmoi publications continue to be placed on the Bibsonomy citation management website (<http://www.bibsonomy.org/>) with the tag *khresmoi-project*. The Khresmoi website publications page generates the list of publications at display time by querying Bibsonomy with this tag (<http://khresmoi.eu/resources/publications/>).

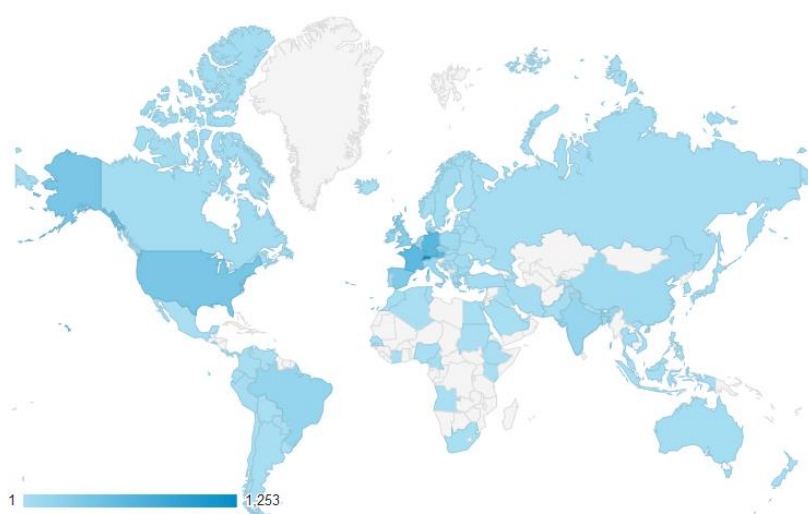
We present here the Khresmoi website access statistics for the period from the 1st of August 2013 to the 31st of July 2014, obtained from Google Analytics.

The following plot shows the number of visits per week over this time period:



In total in year 4, 3457 unique visitors visited the site 6077 times. 55.5% of the visitors were visiting the site for the first time, while 44.5% were returning visitors. Over the full duration of the project (1st of September 2010 to 31st July 2014), 12961 unique visitors visited the site 23848 times.

The following map shows the sources of the visits in year 4:



Visits in year 4 came from 96 countries/territories with the highest number from Switzerland, followed by Germany, Austria and France.

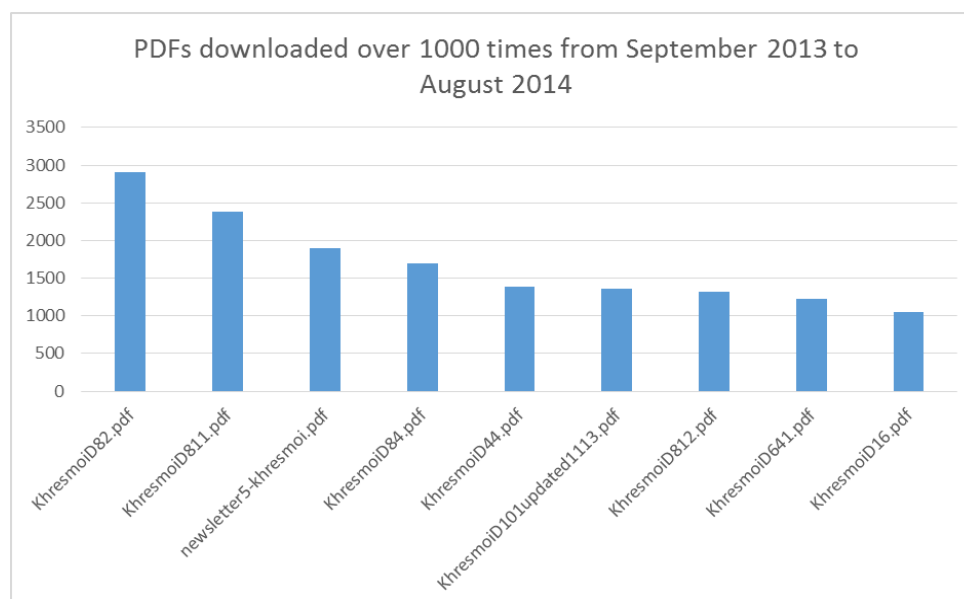
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The number of visits for pages that had over 100 visits are shown below.

Page ?	Pageviews ?	
	18,817 % of Total: 100.00% (18,817)	
1. /	4,463 (23.72%)	
2. /non-search/	2,818 (14.98%)	
3. /resources/	1,078 (5.73%)	
4. /overview/	980 (5.21%)	
5. /use-cases/	814 (4.33%)	
6. /consortium/	798 (4.24%)	
7. /media-center/	754 (4.01%)	
8. /resources/publications/	489 (2.60%)	
9. /overview/khresmoi-for-medical-professionals/	435 (2.31%)	
10. /contact-us/	410 (2.18%)	
11. /resources/deliverables/	378 (2.01%)	
12. /MedSearch/faces/ImageSearch.jsp	322 (1.71%)	
13. /MedSearch/faces/Search.jsp	267 (1.42%)	
14. /overview/khresmoi-for-scientists/	250 (1.33%)	
15. /resources/software/	248 (1.32%)	
16. /resources/prototypes/	224 (1.19%)	
17. /overview/khresmoi-for-everybody/	178 (0.95%)	
18. /resources/presentations/	119 (0.63%)	
19. /overview/khresmoi-for-industry/	117 (0.62%)	

The entry page received the most visits, as is to be expected. The pages introduced in year 2 aimed at scientists, medical professionals, industry and everybody continued to attract a good number of visitors. After an update of the *resources* page in year 3, this page is again highly visited. The most visits are from people who place themselves in the medical professionals and scientists groups, while fewer people visit the industry and public pages.

Many pdf documents are available on the Khresmoi website, including all public deliverables. The following plot shows the total number of downloads in the year 4 period from the beginning of September 2013 to the middle of August 2014 for the 10 pdf documents that have been downloaded over 1000 times in this period:

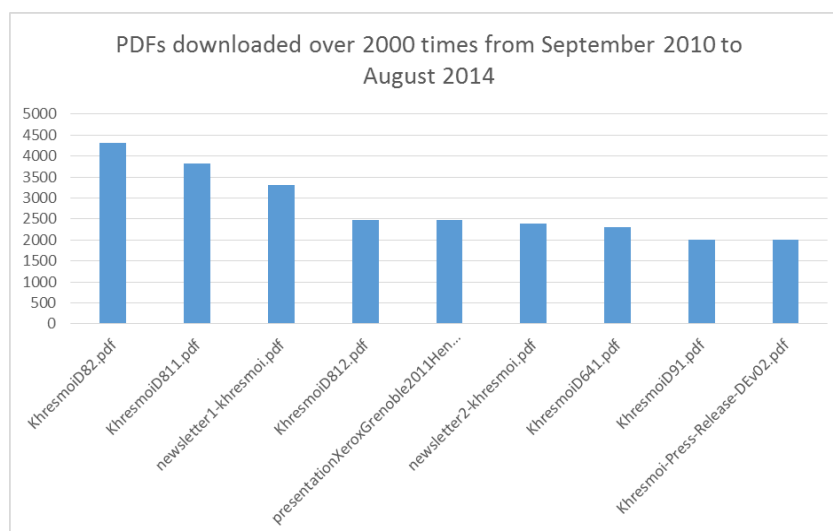


The deliverable with the highest total number of downloads in project year 4 is D8.2, the use case definition document for the physician and general public use cases. Three further deliverables from WP8 are also in the top ten, as is the related D10.1 on the user-centred evaluations for physicians and the general public. This demonstrates the impact that this work package is having. The 5th Khresmoi Newsletter, released in October 2013, has also seen a good number of downloads.

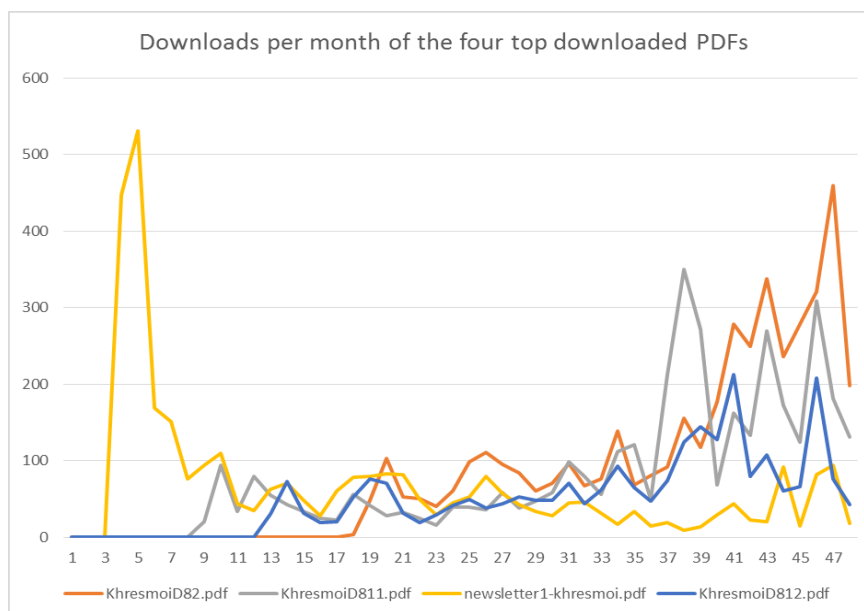
The next plot shows the total number of downloads over the whole project duration (September 2013 to mid-August 2014) for the 10 pdf documents that have been downloaded over 2000 times in this period. Three deliverables related to health search by the general public and physicians (WP8) are in this group. Of course, deliverables and newsletters released earlier in the project are more likely to

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appear in this group, which is also the case. However, it is interesting to note that the most downloaded deliverable, D8.2, has only been available online since project month 19.



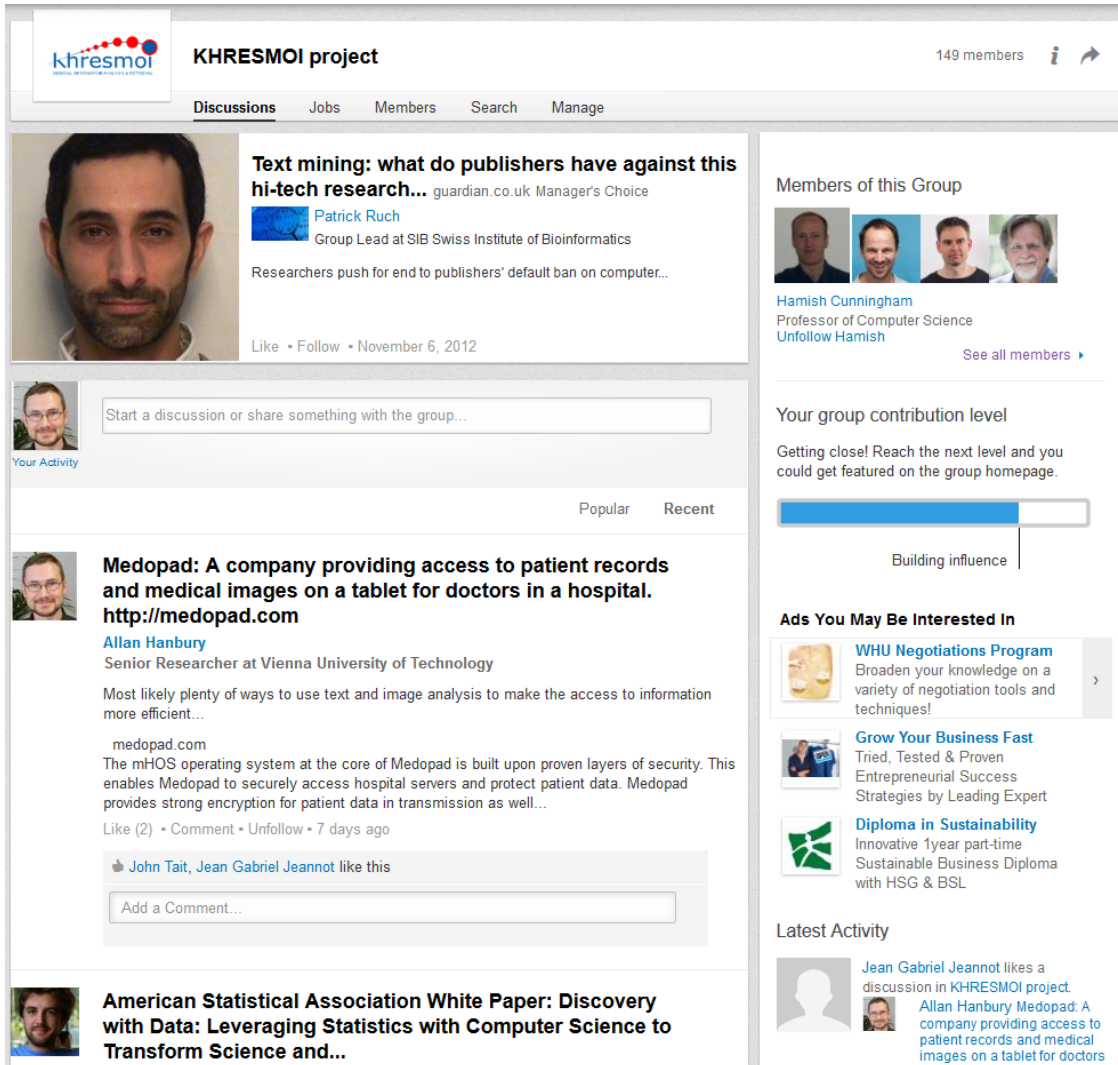
Finally, we examine the downloads per month of the four top-downloaded PDFs over the full project duration. It is interesting to note the increasing number of downloads over time of the three WP8 deliverables, in particular for D8.2. This demonstrates the increasing recognition of the usefulness of the contents of these deliverables, most likely becoming known through Khresmoi publications that reference these deliverables. As is to be expected for the first Khresmoi newsletter, there is a strong peak at the beginning of the project after its release, followed by a fairly constant rate of download over the rest of the project duration.



The Khresmoi web page continues to be well ranked by Google. On google.at, the Khresmoi web page is ranked first for the query “medical information analysis”, while 6 of the 10 top hits for this query are related to the Khresmoi project. The search term “Khresmoi” returns around 18000 results on google.at, which, except for a few pages (in a verification of the first 200 results), are exclusively related to the Khresmoi project.

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The LinkedIn Khresmoi group continues to be active, having grown to 149 members, including many members external to the Khresmoi project. Below is a snapshot of the discussion page on the 6th of August 2014:



3 Dissemination to the Scientific Community

3.1 Publications

3.1.1 Journal articles and Book Chapters

3.1.1.1 Year 4

- Dittrich, E., Riklin Raviv, T., Kasprian, G., Donner, R., Brugger, P. C., Prayer, D. and Langs, G. A spatio-temporal latent atlas for semi-supervised learning of fetal brain segmentations and morphological age estimation. In *Med Image Anal*, 18(1):9–21, Year 2014.
- Langs, G., Sweet, A., Lashkari, D., Tie, Y., Rigolo, L, Golby, A. J., Golland P. Decoupling Function and Anatomy in Atlases of Functional Connectivity Patterns: Language Mapping in Tumor Patients. In *NeuroImage* 20. in press, Year 2014.

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- Donner, René and Menze, Bjoern H and Bischof, Horst and Langs, Georg. Global localization of 3D anatomical structures by pre-filtered Hough Forests and discrete optimization. In Medical image analysis, (17) 8: 1304-1314, Elsevier, Year 2013.
- Ganglberger, Florian and Schulze, Florian and Tirian, Laszlo and Novikov, Alexey and Dickson, Barry and Bühler, Katja and Langs, Georg. Structure-Based Neuron Retrieval Across Drosophila Brains. In Neuroinformatics, 12(3), pp 423-434, Springer, Year 2014.
- Tacke, Andreas and Kriewel, Sascha. Strategic Search Support on Macro and Micro Level. In Datenbank-Spektrum, Vol. 14, pp. 19-28, Year 2014.
- Balog, Krisztian and Elsweiler, David and Kanoulas, Evangelos and Kelly, Liadh and Smucker, Mark D. Report on the CIKM Workshop on Living Labs for Information Retrieval Evaluation. In SIGIR Forum 48(1), pp. 21-28, Year 2014.
- Bojar, Ondřej and Tamchyna, Aleš. The Design of Eman, an Experiment Manager. In The Prague Bulletin of Mathematical Linguistics, (99) 39-58, Year 2013.
- Depeursinge, Adrien and Foncubierta-Rodríguez, Antonio and Van De Ville, Dimitri and Müller, Henning. Three-dimensional solid texture analysis in biomedical imaging: Review and opportunities. In Medical Image Analysis, (18) 1: 176-196, Year 2014.
- Foncubierta-Rodríguez, Antonio and Müller, Henning and Depeursinge, Adrien. Retrieval of high-dimensional visual data: current state, trends and challenges ahead. In Multimedia Tools and Applications, (69) 2: 539-567, Year 2014.
- Depeursinge, Adrien and Foncubierta-Rodríguez, Antonio and Van De Ville, Dimitri and Müller, Henning. Rotation-covariant texture learning using steerable Riesz wavelets . In IEEE Transactions on Image Processing, (23) 2: 898-908, Year 2014.
- Foncubierta-Rodríguez, Antonio and García Seco de Herrera, Alba and Müller, Henning. Comprehensive Health Monitoring and Personalized Feedback Using Multimedia Data, In: Comprehensive Health Monitoring and Personalized Feedback Using Multimedia Data. Springer, Year 2014.
- García Seco de Herrera, Alba and Müller, Henning. Fusion techniques in biomedical information retrieval, In: Fusion in Computer Vision. 209-228, Springer, Year 2014.
- Kalpathy-Cramer, Jayashree and García Seco de Herrera, Alba and Demner-Fushman, Dina and Antani, Sameer and Bedrick, Steven and Müller, Henning. Evaluating Performance of Biomedical Image Retrieval Systems –an Overview of the Medical Image Retrieval task at ImageCLEF 2004-2014. In Computerized Medical Imaging and Graphics, Year 2014.
- García Seco de Herrera, Alba and Schaer, Roger and Markonis, Dimitrios and Müller, Henning. Comparing Fusion Techniques for the ImageCLEF 2013 Medical Case Retrieval Task. In Computerized Medical Imaging and Graphics, Year 2014.
- Demner-Fushman, Dina and Müller, Henning and Kalpathy-Cramer, Jayashree and Antani, Sameer. A decade of community-wide efforts in advancing medical images understanding and retrieval. In Computerized Medical Imaging and Graphics, Year 2014.

3.1.1.2 Year 3

- Müller, Henning and Foncubierta-Rodríguez, Antonio and Depeursinge, Adrien. Sensors, Medical Images and Signal Processing: Ubiquitous Personalized Health Monitoring . In IMIA Yearbook of Medical Informatics, Year 2012.

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- Müller, Henning and Hanbury, Allan and Shorbaji, Najeeb Al. Methods special topic section, Health information search to deal with the exploding amount of health information produced. *Methods of Information in Medicine*. (51) 6: 516-518, Year 2012.
- Markonis, Dimitris and Holzer, Markus and Dungs, Sebastian and Vargas, Alejandro and Langs, Georg and Kriewel, Sascha and Müller, Henning. A survey on visual information search behavior and requirements of radiologists. In *Methods of information in Medicine*, Volume 51, Issue 6, pp. 539-548, Year 2012.
- Gurulingappa, H. and Rajput, A. M. and Roberts, A. and Fluck, J. and Hofmann-Apitius, M. and Toldo, L. Development of a Benchmark Corpus to Support the Automatic Extraction of Drug-related Adverse Effects from Medical Case Reports. *Journal of Biomedical Informatics* 45(5):885-92, Year 2012.
- Agosti, Maristella and Catarci, Tiziana and Ferro, Nicola and Müller, Henning and Santucci, Giuseppe. PROMISE Winter School 2012: Information Retrieval meets Information Visualization. In *SIGIR Forum*, (46) 1: 65-70, Year 2012.
- Kritz, Marlene and Gschwandtner, Manfred and Stefanov, Veronika and Hanbury, Allan and Samwald, Matthias. Utilization and Perceived Problems of Online Medical Resources and Search Tools among Different Groups of European Physicians. In *Journal of Medical Internet Research*, (15) 6: e122, Year 2013.
- Cunningham, Hamish and Tablan, Valentin and Roberts, Angus and Bontcheva, Kalina. Getting More Out of Biomedical Documents with GATE's Full Lifecycle Open Source Text Analytics. In *PLOS Computational Biology*, Year 2013.

3.1.1.3 Year 2

- Depeursinge, Adrien and Duc, Samuel and Eggel, Ivan and Müller, Henning. Mobile Medical Visual Information Retrieval. In *IEEE Transactions on Information Technology in BioMedicine*, Jan;16(1):53-61, Year 2012.
- Depeursinge, Adrien and Vargas, Alejandro and Gaillard, Frédéric and Platon, Alexandra and Geissbuhler, Antoine and Poletti, Pierre-Alexandre and Müller, Henning. Case-based lung image categorization and retrieval for interstitial lung diseases: clinical workflows. In *International Journal of Computer Assisted Radiology and Surgery*, Jan;7(1):97-110, Year 2012.
- Depeursinge, Adrien and Vargas, Alejandro and Platon, Alexandra and Geissbuhler, Antoine and Poletti, Pierre-Alexandre and Müller, Henning. Building a Reference Multimedia Database for Interstitial Lung Diseases. In *Computerized Medical Imaging and Graphics*, Volume 36, Issue 3, April 2012, Pages 227-238, Year 2011.
- Kriewel, Sascha. Interaktives Retrieval und situationsabhängige Vorschläge. In *Datenbank-Spektrum*, (11) 3: 173-181, Year 2011.
- Depeursinge, Adrien and Van de Ville, Dimitri and Platon, Alexandra and Geissbuhler, Antoine and Poletti, Pierre-Alexandre and Müller, Henning. Near-Affine-Invariant Texture Learning for Lung Tissue Analysis Using Isotropic Wavelet Frames, *IEEE Trans Inf Technol Biomed*. Jul;16(4):665-675 Year 2012.

3.1.1.4 Year 1

- Matthias Samwald, Anja Jentzsch, Christopher Bouton, Claus Stie Kallesøe, Egon Willighagen, Janos Hajagos, M Scott Marshall, Eric Prud'hommeaux, Oktie Hassenzadeh, Elgar Pichler, Susie Stephens. Linked open drug data for pharmaceutical research and development. *Journal of Cheminformatics* 2011, 3:19

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- Xin Zhou, Richard Stern, Henning Müller, Case-based Fracture Image Retrieval, International Journal of Computer Assisted Radiology and Surgery, Volume 7, Issue 3, pp 401-411, 2012.
- Adrien Depeursinge, Benedikt Fischer, Henning Müller, Thomas M. Deserno. Prototypes for content-based image retrieval in clinical practice. The Open Medical Informatics Journal (TOMIJ), Vol. 5, pp 58-72, 2011.
- Xiaohong Gao, Henning Müller, Thomas M. Deserno, Editorial: Integration of Medical images into the Digital Hospital, The open medical informatics journal (TOMIJ), 2011.
- Henning Müller, Thomas M. Deserno. Content-based medical image retrieval. In: Biomedical Image Processing, pp. 471-494, Springer, 2011.
- Jayashree Kalpathy-Cramer, Henning Müller. Systematic Evaluations and Ground Truth. In: Biomedical Image Processing, Springer, 2011.

3.1.2 Conference and workshop articles

3.1.2.1 Year 4

- Wu, Jing and Gerendas, Bianca and Aldstein, Sebastia and Langs, Georg and Simader, Christian and Schmidt-Erfurth, Ursula. Stable Registration of Pathological 3D SD-OCT Scans using Retinal Vessels. Proceedings of MICCAI Ophthalmic Medical Image Analysis Workshop'14. editor(s) Chen, Xinjian. Year 2014.
- Schlegl, Thomas and Ofner, Joachim and Langs, Georg. Unsupervised pre-training across domains improves lung tissue classification. Proceedings of MICCAI-bigMCV'14. editor(s) Menze, Bjoern. Year 2014.
- Schwartz, Ernst and Jakab, András and Langs, Georg. A locally linear method for enforcing temporal smoothness in serial image registration. Proceedings of MICCAI-STIA'14. editor(s) Gerig, Guido. Year 2014.
- Montuoro, Alessio and Wu, Jing and Waldstein, Sebastian and Gerendas, Bianca and Langs, Georg and Simader, Christian and Schmidt-Erfurth, Ursula. Motion Artefact Correction in Retinal Optical Coherence Tomography using Local Symmetry. Proceedings of MICCAI'14. editor(s) Golland, Polina. Year 2014.
- Vogl, Wolf-Dieter and Prosch, Helmut and Mueller-Mang, Christina and Schmidt-Erfurth, Ursula and Langs, Georg. Longitudinal Alignment of Disease Progression in Fibrosing Interstitial Lung Disease. Proceedings of MICCAI'14. editor(s) Golland, Polina. Year 2014.
- Holzer, M. and Donner, R. Over-Segmentation of 3D Medical Image Volumes based on Monogenic Cues. Proceedings of the CVWW'14. editor(s) Kúkelová, Zuzana and Heller, Jan. 35-42, Year 2014.
- Kelly, Liadh and Goeuriot, Lorraine and Suominen, Hanna and Schreck, Tobias and Leroy, Gindy and Mowery, Danielle L. and Velupillai, Sumithra and Chapman, Wendy W. and Martinez, David and Zuccon, Guido and Palotti, Joao. Overview of the ShARe/CLEF eHealth Evaluation Lab 2014. Proc. CLEF 2014. (8685) 173-192, Springer LNCS, Year 2014.
- Goeuriot, Lorraine and Kelly, Liadh and Li, Wei and Palotti, Joao and Pecina, Pavel and Zuccon, Guido and Hanbury, Allan and Jones, Gareth J. F. and Müller, Henning. ShARe/CLEF eHealth Evaluation Lab 2014, Task 3: User-centred health information retrieval. CLEF Online Working Notes. Year 2014.
- Salampasis, Michail and Hanbury, Allan. A Generalized framework for Integrated Professional Search Systems. Multidisciplinary Information Retrieval, Proc. IRFC 2013. editor(s) Lupu, M and Kanoulas, E. and Loizides, F. (8201) 99-110, Springer LNCS, Year 2013.

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- Samwald, Matthias and Stefanov, Veronika and Petz, Georg and Volko, Claus-Dieter and Hanbury, Allan. Improving the Quality and Findability of Open Medical Information on the Web: Medical Wikidata and the FindMeEvidence Search Engine. Proc. Medicine 2.0. Year 2014.
- Samwald, Matthias and Hanbury, Allan. An open-source, mobile-friendly search engine for public medical knowledge. Proc. Medical Informatics Europe 2014. Year 2014.
- García Seco de Herrera, Alba and Foncubierta-Rodríguez, Antonio and Schiavi, Emanuele and Müller, Henning. 2D-Based 3D Volume Retrieval Using Singular Value Decomposition of Detected Regions. MICCAI workshop MCV. Year 2014.
- Markonis, Dimitrios and Donner, René and Holzer, Markus and Schlegl, Thomas and Dungs, Sebastian and Kriewel, Sascha and Langs, Georg and Müller, Henning. A Visual Information Retrieval System for Radiology Reports and the Medical Literature. Multimedia Modeling conference. Year 2014.
- Schaer, Roger and Markonis, Dimitrios and Müller, Henning. Architecture and applications of the Parallel Distributed Image Search Engine (ParaDISE). 1st International Workshop on Future Search Engines at INFORMATIK 2014. Year 2014.
- Ionescu, Bogdan and Popescu, Adrian and Müller, Henning and Menendez, Maria and Radu, Anca-Livia. Benchmarking Result Diversification in Social Image Retrieval. IEEE International Conference on Image Processing. Year 2014.
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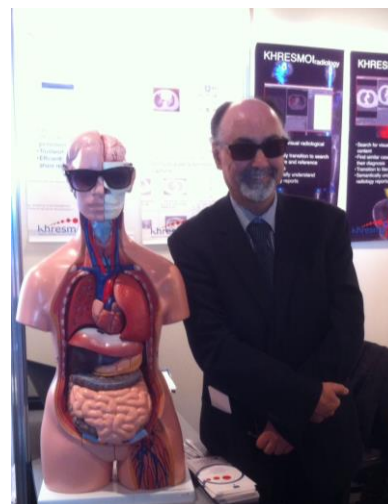
3.1.4 Special Issue

The special topic in the journal *Methods of Information in Medicine* (edited by Henning Müller, Allan Hanbury and Najeeb Al Shorbaji) received 10 submissions, of which 5 passed the review process. It was published in December 2012.

3.2 Presentations

3.2.1 Year 4

Khresmoi had a booth at the Language Resources and Evaluation Conference (LREC) conference in Reykjavik, Iceland, from the 28th to the 30th of May, where the three prototypes were demonstrated to visitors (DCU, TUW). LREC is the major event on Language Resources and Evaluation for Language Technologies. The LREC conference covers Language Resources and their applications, evaluation methodologies and tools, industrial uses and needs, and requirements coming from the e-society, both with respect to policy issues and to technological and organisational ones.



Further presentations about topics related to Khresmoi are listed below:

- 27.8.2014, Poster presentation at the IliX Conference, User intent behind medical queries: An evaluation of entity mapping approaches with Metamap and Freebase, Regensburg, Germany (Joao Palotti, TUW)
- 24.8.2014 - Invited presentation at the Semantic Web and Information Extraction (SWAIE) workshop at COLING 2014. "How can IE and Semantics Improve the Medical Practice?", Dublin, Ireland (Lorraine Goeuriot, DCU)
- 17.7.2014, Presentation at the University of Zagreb, Domain-specific Search: What do doctors and patent searchers have in common?, Zagreb, Croatia (Allan Hanbury, TUW)
- 9.7.2014, Poster at SIGIR 2014 - An Analysis of Query Difficulty for Information Retrieval in the Medical Domain (Lorraine Goeuriot, DCU)
- 7.2014, Presentation of automatic question answering for protein function prediction at ISMB SIG Meeting (CAFA) on Protein Function Prediction, Boston (Patrick Ruch, HES-SO)
- 7.2014, Presentation at Fondazione Bruno Kessler, Trento, Italy, Machine learning and group-wise Registration in Neuroimaging (Georg Langs, MUW)
- 30.06.2014, Presentation on GATE and Semantic Annotation at Bristol University, Bristol, UK, (Kalina Bontcheva, USFD)
- 26.6.2014, Poster presentation at the ACL WMT workshop, Machine Translation of Medical Texts in the Khresmoi Project, Baltimore, USA (Ondřej Dušek and Jindřich Libovický, CUNI)
- 23.06.2014 Meeting on health related annotation with Department of Computer Science University of Manchester, Manchester, UK (Angus Roberts, USFD)
- 17.6.2014, Presentation at the Radboud University Nijmegen, Abstraction and Evaluation of Domain-Specific Search, Nijmegen, The Netherlands (Allan Hanbury, TUW)
- 2.6.2014, invited presentation at the IJCAISC, Zakopane, Poland (Henning Müller, HES-SO)
- 31.5.2014, Poster at LREC workshop on Building and Evaluating Resources for Health and Biomedical Text Processing - Building realistic potential patients queries for medical information retrieval evaluation (Lorraine Goeuriot, DCU)

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- 30.5.2014, invited presentation at the PRIP conference in Minsk, Belarus (Henning Müller, HES-SO)
- 29.5.2014, poster presentation at LREC Iceland: Multilingual Test Sets for Machine Translation of Search Queries for Cross-Lingual Information Retrieval in the Medical Domain, Prague, Czech Republic (Ondřej Dušek, CUNI)
- 5.2014, Presentation at Columbia University, New York, USA, Image Retrieval and large-scale visual data mining (Georg Langs, MUW)
- 29.4.2014, Poster at the 6th Imaging in Life Sciences workshop, KHRESMOI - a Large-Scale Medical Image Retrieval System, AIT Austrian Institute of Technology, Vienna, Austria (René Donner, MUW)
- 14.4.2014, Khresmoi Demo, European Conference on Information Retrieval, Amsterdam, The Netherlands (TUW, UDE, DCU)
- 4.2014, Presentation at Nanyang Technical University Singapore, Singapore, Large-scale medical imaging computing, applications in the clinical practice and in neuroimaging (Georg Langs, MUW)
- 3.2014, Seminar LIA – Khresmoi: Création d'un système de recherche d'informations médicales, Avignon, France (Lorraine Goeuriot, DCU)
- 28.2.2014, Presentation at Workshop on Log-based Personalization, Exploiting Health Related Features to Infer User Expertise in the Medical Domain (Joao Palotti, TUW)
- 2.2014, Seminar Biosticker – Extraction et recherche d'informations textuelles dans le domaine médical, Nantes, France (Lorraine Goeuriot, DCU)
- 23.1.2013, Meeting at UK Food and Environment Research Agency, York, UK (Angus Roberts, USFD)
- 7.1.2014-11.1.2014, Demo at Multimedia Modeling Conference 2014, A Visual Information Retrieval System for Radiology Reports and the Medical Literature at Dublin, Ireland (Dimitrios Markonis, HES-SO)
- 1.2014, Seminar in LSIS – Khresmoi: Création d'un système de recherche d'informations médicales, Marseille, France (Lorraine Goeuriot, DCU)
- 1.2014, Seminar in IRISA – Khresmoi: Création d'un système de recherche d'informations médicales, Rennes, France (Lorraine Goeuriot, DCU)
- 27.11.2013, Presentation at the meeting of the working group for Visual Computing in Biology and Medicine of the German Society of Informatics, Anatomical Structure Localization in Large Scale Medical Image Retrieval, Innsbruck, Austria (René Donner, MUW)
- 15.11.2013, ImageCLEF workshop at AMIA with presentation on Khresmoi, Washington, USA (Henning Müller, HES-SO)
- 23.10.2013, Teleconference with Universidade Federal do Parana (Brazil), Sheffield, UK, (Angus Roberts, USFD)
- 23-24.9.2013, poster presentation at Medicine 2.0`2013, London, the UK (Natalia Pletneva, HON)
- 23.9.2013, Presentation at the CLEF Conference, A Formative Evaluation of a Comprehensive Search System for Medical Professionals, Valencia, Spain (Allan Hanbury, TUW)

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- 19-20.9.2013, Khresmoi booth at the META-FORUM 2013, Berlin, Germany (Allan Hanbury, TUW, Jan Hajic, CUNI)
- 10.9.2013, poster presentation and demo at MT Marathon, MTMonkey: A Scalable Infrastructure for a Machine Translation Web Service, Prague, Czechia (Aleš Tamchyna and Rudolf Rosa, CUNI)

3.2.2 Year 3

Khresmoi is very visible at the 14th World Congress on Medical and Health Informatics (MedInfo) held in Copenhagen, Denmark from August 20th to August 23rd 2013, with the following activities:

- Presentation (45 minutes) of the Khresmoi prototypes (TUW, HES-SO)
- Presentation on *Preparing user tests for assessing a medical image retrieval system: A pilot study* (HES-SO)
- Poster on *Key-Phrase Based Classification of Public Health Web Pages* (HON)
- Poster on *Physicians searching the web for medical question answering: A European survey and local user studies* (TUW, GAW)

Further presentations about topics related to Khresmoi are listed below:

- 8.8.2013, poster presentation at WMT (Workshop on Statistical Machine Translation), Chimera – Three Heads for English-to-Czech Translation, Sofia, Bulgaria (Aleš Tamchyna and Rudolf Rosa, CUNI)
- 6.8.2013, oral presentation at ACL SRW (Annual Meeting of the Association for Computational Linguistics), Deepfix: Statistical Post-editing of Statistical Machine Translation Using Deep Syntactic Analysis, Sofia, Bulgaria (Rudolf Rosa, CUNI)
- 1.8.2013 Poster presentation at the ACM SIGIR Workshop on Health Search and Discovery (Lorraine Goeuriot, DCU)
- 1.8.2013 Poster presentation at the ACM SIGIR Workshop on Health Search and Discovery (Liadh Kelly, DCU)
- 16.7.2013 Invited presentation at the Institute for Medical Informatics, Biel, Switzerland (Patrick Ruch, HES-SO)
- 15.7.2013 Presentation at the WIDTH meeting, Athens, Greece (Dimitrios Markonis, HES-SO)
- 10.7.2013 Presentation at Fudan University, China (Alba Garcia, HES-SO)
- 5.7.2013 Presentation at the EMBC, Osaka, Japan (Antonio Foncubierta, HES-SO)
- 27.6.2013 Invited presentation at the VRVis Research Centre, Search in Medical Texts and Images, Vienna, Austria (Allan Hanbury, TUW)
- 18.6.2013 Presentation at the 5th International Workshop on Evaluating Information Access (EVIA), Tokyo, Japan (Gareth Jones, DCU)
- 13.6.2013 Introduction to Text Analytics, ForgetIT meeting, Edinburgh, UK (Mark Greenwood, USFD)
- 30.5.2013, Deutscher Roentgenkongress, How semantics can help in radiology, Hamburg, Germany, invited talk in a session on semantics in radiology (Henning Müller, HES-SO)

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- 30.5.2013 IST-Africa Conference, *Adapting Mobile Medical Information Search to Low-Resourced Areas*, Nairobi, Kenya (Allan Hanbury, TUW)
- 22.5.2013 Conference on Open Areas in Information Retrieval (OAIR), *Toward a Model of Domain-Specific Search*, Lisbon, Portugal (Allan Hanbury, TUW)
- 11.5.2013 invited talk at 3D object retrieval workshop at Eurographics, 3D medical retrieval, Girona, Spain (Henning Müller, HES-SO)
- 10.4.2013 presentation at ISBI 2013, San Francisco, USA (Adrien Depeursinge, HES-SO)
- 8.4.2013 presentation at ISBI 2013, San Francisco USA (René Donner, MUW)
- 20.03.2013 Meeting with University of Manchester Medical Informatics, Sheffield, UK (Angus Roberts, USFD)
- 14.12.2012 The 24th International Conference on Computational Linguistics (Coling 2012). Simple and Effective Parameter Tuning for Domain Adaptation of Statistical Machine Translation. Mumbai, India. (Pavel Pecina, CUNI)
- 29.10.2012 presentation at the Crowdsourcing workshop at ACM Multimedia on medical ground truth generation, Nara, Japan (Antonio Foncubierto, HES-SO)
- 5.10.2012 Presentation at MICCAI workshop on computer vision in medicine, Nice, France, (Georg Langs, MUW)
- 1.10.2012 Presentation at MICCAI workshop on Computer Assisted Stenting, Nice, France (Ernst Schwartz, MUW)
- 1.10.2012 Presentation at MICCAI workshop on medical content-based retrieval for clinical decision support, Nice, France (Henning Müller, HES-SO)
- 28.9.2012 Presentation at HISB on using Hadoop/MapReduce for medical imaging (Roger Schaer, HES-SO)
- 18.9.2012 Presentation at the CLEF Conference (Henning Müller, HES-SO)
- 18.9.2012 Poster at the CLEF eHealth workshop (Gareth Jones, DCU)
- 7.9.2012 Presentation on Intelligent information access techniques for on-line health information search: A survey of non-physicians, International conference on communication in healthcare 2012, Saint Andrews, the UK (Natalia Pletneva, HON)

3.2.3 Year 2

Khresmoi is again very visible at the Medical Informatics Europe Conference (MIE) held in Pisa, Italy from August 26th to August 29th 2012, with the following activities:

- Booth at the MIE Village of the Future
- Presentation at the MIE Village of the Future session on “People and Expectations” (TUW)
- Tutorial on *Searching Text and Images in the Medical Domain* (TUW, HES-SO)
- Oral presentation on *Online health information search: what struggles and empowers the users? Results of an online survey* (HON)
- Oral presentation on *Trustworthiness and Relevance in Web-Based Clinical Question Answering* (HON)
- Poster presentation on *A curated index of high-quality web resources for medical practitioners* (TUW)

D11.3.4 Final dissemination and training report

Further presentations about topics related to Khresmoi are given below:

- 16.8.2012 A Cloud-based Approach for Evaluation on Private Data, presented at the SIGIR Workshop on Community IR Evaluations using Private Data, Portland, Oregon, USA (TUW)
- 11.7.2012 Demonstration of Khresmoi for knowledge technology group at GESIS Institute (UDE)
- 28.6.2012 Participation in panel on access to scientific data at the CBMI conference, Annecy, France (HES-SO)
- 22.6.2012 Khresmoi mentioned in invited talk at the main session, META-FORUM, Brussels (ATOS)
- 21.6.-22.6.2012 Poster at the “mini-expo” at the META-FORUM conference in Brussels, demo of translation system (CUNI)
- 18.06.2012 - 22.06.2012 GATE annual training week, demos of Mimir and Khresmoi to various people (USFD)
- 27.5.2012 Presentation of a paper on *Supporting Collaborative Improvement of Resources in the Khresmoi Health Information System* at the LREC workshop on Collaborative Resource Development and Delivery (DCU)
- 23-25.5.2012 LREC Conference, Khresmoi booth at the EU Projects Village, Istanbul (TUW, DCU, CUNI, ELDA). At the booth, Khresmoi was presented to his Excellency Deputy Minister Prof. Dr. Davut Kavranoglu, Ministry of Science, Industry and Technology of Turkey
- 19.5.2012 Think Tank at the World Wide Web conference on benchmarking and industry interest in it, Lyon, France (HES-SO)
- 21.3.2011 Presentation of the Khresmoi project at the LOD2 project consortium meeting (TUW)
- 02.2012 SPIE Medical Imaging 2012, San Diego, CA, USA, presentations on the following topics (HES-SO):
 - *Creating a classification of image types in the medical literature for visual categorization*
 - *Synchronized slice viewing of similar image series*
 - *Multi-Scale Visual Words for Hierarchical Medical Image Categorisation*
 - *Three dimensional multi-scale visual words for texture-based cerebellum segmentation* (Poster)
- 26.01.2012 Presentation including Khresmoi to meeting with Universities of Leeds and York (USFD)
- 24.11.2011 Presentation on Khresmoi and experience in FP7 at the University of Bern (HES-SO)
- 24.11.2011 Presentation including Khresmoi at Internet Memory in Paris (USFD)
- 16.11.2011 CNGL Localisation Innovation Showcase, <http://www.cngl.ie/localisationinnovationshowcase.html>, Poster (DCU)
- 05.10.2011 Presentation at eHealth Informatics meeting, (USFD)
- 18-22.09.2011 MICCAI 2011, Toronto, Canada, Presentation of papers at the conference and workshops (HES-SO, MUW):

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- *Evaluation of Fast 2D and 3D Medical Image Retrieval Approaches based on Image Miniatures*
- *SuperPixel-based Interest Points for Effective Bags of Visual Words Medical Image Retrieval*
- *Lung Texture Classification Using Locally-Oriented Riesz Components. Medical Image Computing and Computer-Assisted Intervention*
- 3-4.10.2011 Statements at the iHealth Workshop in Brussels, Belgium (TUW, HES-SO)
- 14.09.2011 African Telemedicine Conference, Cape Town, South Africa, Presentation on Khresmoi (TUW)
- 6.9.2011 Invited talk on visual and textual image retrieval at the Spanish Natural Language Processing Conference in La Huelva, Spain (HES-SO)

3.2.4 Year 1

Khresmoi is very visible at the Medical Informatics Europe Conference (MIE) 2011, with the following activities:

- Organisation of a workshop (see Section 7.1)
- Member of the panel “Towards ‘Ideal Healthcare’: optimised and personalised future medicine” (Allan Hanbury).
- Member of the panel “Barriers in translational medicine” (Henning Müller)
- Presentation on Khresmoi (Matthias Samwald)
- Member of the panel on Medical Image Processing (Henning Müller)

Further presentations:

- Invited talk on visual and textual image retrieval at the Spanish natural language processing conference in La Huelva, Spain (Henning Müller, September 2011)
- Automated Categorization Of Abnormalities Based On Computer Vision Analysis Of Large Medical Imaging Collections, International Computer Vision Summer School, Sicily, Italy (Andreas Burner, July 2011)
- Invited talk on "3D Anatomical Structure Localization" at the MITACS-Fields conference on Mathematics of Medical Imaging, Fields Institute, University of Toronto, Canada (René Donner, June 20–24, 2011)
- Presentation at the WiNET Conference, Dortmund, Germany (Veronika Stefanov, 4th June 2011)
- Automated Categorization Of Abnormalities Based On Computer Vision Analysis Of Large Medical Imaging Collections, Young Scientist Association, 7th Symposium, Vienna, Austria (Andreas Burner, June 2011)
- Demonstration of Mimir to NHS National Institute of Health Biomedical Research Center, South London and Maudsely NHS Trust (Angus Roberts, 30 May 2011)
- Presentation at the Workshop on "Enabling 21st Century Healthcare by Advanced Informatics", a satellite meeting of the European Human Genetics Conference 2011, 27th May 2011 (Allan Hanbury, 27 May 2011)
- Presentation at the eHealth conference in Vienna (Matthias Samwald, 27 May 2011)
- Presentation at the Xerox research center (Henning Müller, 3 March 2011)
- Invited talk, Sahlgrenska University Hospital, Sweden (Angus Roberts, 19 January 2011)
- Invited talk, University of Gothenburg, Sweden (Angus Roberts, 19 January 2011)
- ATOS presentation at Open Health Spain 2010 (10–11 November 2010)

3.3 Workshops

3.3.1 Year 4

This year at the SIGIR conference (Special Interest Group On Information Retrieval), several members of the Khresmoi consortium (Lorraine Goeuriot, Liadh Kelly, Gareth Jones (DCU) and Henning Müller (HES-SO)), together with Justin Zobel (University of Melbourne), organised the first **Workshop on Medical Information Retrieval (MedIR)**. The objective of this workshop is to provide a forum to enable the progress of research in medical information retrieval to provide enhanced search services for all users with interests in medical information search. Participation from researchers in all fields related to medical information search including mainstream information retrieval, but also natural language processing, multilingual text processing, and medical image analysis was encouraged. The workshop programme committee gathers 15 experts from the domain. 20 papers were submitted to the workshop, of which 8 were accepted. Four of the accepted papers were written by Australian groups, three from European ones and one from a Singaporean group. Papers cover a broad range of topics, including information retrieval evaluation, natural language processing and information retrieval, and knowledge discovery.

Khresmoi sponsored the Fourth **Workshop on Building and Evaluating Resources for Health and Biomedical Text Processing** (BioTxtM 2014), held after the LREC. The workshop featured an invited talk by Georgios Paliouras, coordinator of the BioASQ project, which organises challenges on large-scale biomedical semantic indexing and question answering. After presentations of papers and posters accepted for the workshop, a discussion session was held on identifying missing resources for health and biomedical text processing, and proposing ways in which these resources could be created.

Georg Langs (MUW) was a co-chair of the NIPS **Workshop on Machine Learning and Interpretation in Neuroimaging**, held at Lake Tahoe, USA on the 7th of December 2013.

3.3.2 Year 3

- 17–20.9.2012 ImageCLEF workshop, Rome, Italy (HES-SO)
- 1.10.2012 MCBR-CDS 2012: Medical Content-based Retrieval for Clinical Decision Support, with the MICCAI 2012 (HES-SO)
- 5.10.2012 Medical Computer Vision 2012, with the MICCAI 2012 (MUW)

3.3.3 Year 2

- 15-18.12.2011 NIPS Workshop, <http://www.nips.cc>, Chairing workshop on Machine Learning in Neuroimaging (MUW)
- 18-22.09.2011 MICCAI 2011, Toronto, Canada, Organization of a workshop on content-based medical image retrieval (HES-SO)
- 19-22.11.2011 ImageCLEF workshop, Amsterdam, The Netherlands (HES-SO).

3.3.4 Year 1

- MCBR-CDS 2011: Medical Content-based Retrieval for Clinical Decision Support. Workshop at the MICCAI 2011 Conference, 22 September 2011.
- The ImageCLEF workshop also serves as a dissemination platform for Khresmoi, as Khresmoi technology is evaluated on the ImageCLEF tasks, and results can be compared to those of other strong groups in the field of visual information retrieval for medicine.

4 Dissemination to the Business Community

4.1 Publications

- Allan Hanbury, Célia Boyer, Manfred Gschwandtner, Henning Müller, KHRESMOI: Towards a Multi-Lingual Search and Access System for Biomedical Information, Med-e-Tel, Luxembourg, April 2011.

4.2 Presentations

4.2.1 Year 4

- 26/27.8.2014, presentation of Khresmoi to Contextvision personnel, Stockholm, Sweden (Henning Müller, HES-SO)
- 6.8.2014, Meeting with Veloscient, Sheffield, UK (Angus Roberts, USFD)
- 7.2014, Presentation of automatic question answering at Novartis Campus, Boston (Patrick Ruch, HES-SO Geneva)
- 6.6.2014, presentation of Khresmoi at the Sierre eHealth day (Henning Müller, HES-SO)
- 22.5.2014, Khresmoi Radiology presentation to St. Elisabeth Hospital, Conference Call, USA (Blanca Jordan, Markus Brandes, Matthieu Schmith, ATOS)
- 13-15.5.2014, Meetings with different stakeholders, eHealth event, Athens, Greece (Blanca Jordan, ATOS)
- 07.05.2014, Meeting with NineHelath CIC at The Royal Society of Medicine, London, UK (Angus Roberts, USFD)
- 29.4 - 1.5.2014, Posters and meetings to disseminate Khresmoi results, 13th Annual Bio-IT World Conference and Expo, Boston, USA (ONTO)
- 28-29.4.2014, Posters and meetings to disseminate Khresmoi results, 2nd Annual Medical Informatics World Conference, Boston, USA (ONTO)
- 14.4.2014, Khresmoi services presentation to Servei Català de Salut (Catalonian Public Healthcare Service), Barcelona, Spain (Blanca Jordan, Mercedes Payá, ATOS)
- 24.3.2014, Khresmoi services presentation to Otsakidetxa (Vasque Country main Public Healthcare Service), Vasque Country, Spain (Lydia Montandon, Mercedes Payá, ATOS)
- 21.3.2014, Presentation of Khresmoi text processing results to the company TRIP Database via telco (Allan Hanbury, TUW)
- 3.3.2014, Presentation of Khresmoi text processing results to the company Precognox via telco (Allan Hanbury, TUW)
- 3.3.2014, Presentation of Khresmoi text processing results to the company Findwise via telco (Allan Hanbury, TUW)
- 17.2.2014 – Khresmoi Professional and Khresmoi Radiology to Assistance Publique Hôpitaux de Paris, Paris, France (Josema Cavanillas, R&D Director, ATOS)
- 11.2.2014, NESSI Big Data in Health meeting, Brief presentation of Khresmoi, Madrid, Spain (Allan Hanbury, TUW)

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- 30.1.2014, Khresmoi services presentation to Grupo Hospitalario Quirón (Spain biggest private medical group), Madrid, Spain (Blanca Jordan, ATOS)
- 29.1.2014, presentation of Khresmoi at the day of the health technology innovation centre, Sierre, Switzerland (Henning Müller, HES-SO)
- 27.01.2014, Meeting with UK Patient Information Forum, Manchester, UK (Angus Roberts, USFD)
- 21.1.2014, Khresmoi for professionals and Khresmoi Radiology presentations to Servicio de Salud de la Comunidad de Madrid (Madrid Region Health Service), Madrid, Spain (Blanca Jordan, ATOS)
- 8.1.2014, Khresmoi Radiology to SIEMENS, München, Germany (Blanca Jordan, ATOS)
- 18.12.2013, presentation of Khresmoi to members of the company Contextvision in Sierre, Switzerland (Henning Müller, HES-SO)
- 25.11.2013, Meeting with internal teams to include Khresmoi as part of the offering for ATOS-EMC Strategic Alliance, Conference Call (Blanca Jordan, Markus Brandes, Andrew Stevenson, ATOS)
- 22.11.2013, Meeting with NineHealth Community Interest Company, Sheffield, UK (Angus Roberts, USFD)
- 13.11.2013, Khresmoi services presentation to Grenoble Hospital, Grenoble, France (Markus Brandes, ATOS)
- 4.11.2013, Teleconference with MarkLogic, Sheffield, UK, (Angus Roberts, USFD)
- 17-18.10.2013, Meeting with ATOS-SIEMENS Alliance, München, Germany (Blanca Jordan, ATOS)
- 7-8.10.2013, Meetings to present Khresmoi at the BioTech Innovation Days, Paris (TUW, HES-SO)

4.2.2 Year 3

- 21-22.8.2013 Participation in the Digital Health Days and B2B meetings for dissemination, Stockholm, Sweden (Alexandre Cotting, HES-SO)
- 11.7.2013 Invited presentation at the Innovative Medicine Initiative event, organized by the Inbiomedvision support action, Brussels, Belgium (Patrick Ruch, Arnaud Gaudinat and Mathilde Panes, HES-SO)
- 12.6.2013 Presentation of Khresmoi at a company workshop organised by the Technology Transfer Centre of the Vienna University of Technology (Matthias Samwald, Veronika Stefanov, Allan Hanbury, TUW)
- 6.5.2013 Presentation of Khresmoi to the company BiConcepts (Matthias Samwald, Allan Hanbury, TUW)
- 26.04.2013 Presentation to The Lighthouse Group, Amsterdam, Netherlands (Angus Roberts, USFD)
- 23.04.2013 Presentation to ACS primary care software supplier, London, UK (Angus Roberts, USFD)

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- 5.4.2013 Presentation of Khresmoi to a financial and legal expert to get feedback on the viability of a spin-off company – meeting set up by the Vienna Technology Agency (Georg Langs, Allan Hanbury, Henning Müller)
- 8.3.2013 Presentation of Khresmoi to a representative of the company Infermedica (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 8.3.2013 Presentation of Khresmoi to a representative of the company Precognox (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 8.3.2013 Presentation of Khresmoi to a representative of the company Intratel (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 7.3.2013 Presentation of Khresmoi to a representative of the company Rosario Software (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 5.3.2013 Presentation of Khresmoi to a representative of the company TEMIS (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 5.3.2013 Presentation of Khresmoi to a representative of the company Synthema (meeting organised in the framework of CeBIT, Allan Hanbury, TUW)
- 26.2.2013 Presentation to MEDTING, Madrid, Spain (Blanca Jordán, ATOS)
- 07.2.2013 Talk at SONMED CT workshop, Birmingham, UK (Angus Roberts, USFD)
- 12.12.2012 Talk at DEFRA for Food and Environment research Agency, London, UK (Angus Roberts, Valentin Tablan USFD)
- 29.11.2012 Local eHealth day between companies and academia including a presentation of Khresmoi, Sierre, Switzerland (Henning Müller, HES-SO)
- 22.11.2012 Presentation to Merck, Manchester, UK (Angus Roberts, USFD)
- 20.11.2012 Presentation during teleconference with UK Connecting for Health, Sheffield, UK (Angus Roberts, USFD)
- 6.11.2012 Presentation at Health 2.0 Europe (Allan Hanbury, TUW)
- 21.10.2012 Presentation during teleconference with Quintiles pharmaceutical company, Sheffield, UK (Angus Roberts, USFD)
- 27.9.2012 Presentation to EMIS primary care software supplier, Sheffield, UK (Angus Roberts, USFD)
- 25.9.2012 CHORUS+ Workshop on Search Computing, Brussels, Belgium, presentation on Enterprise Search in Medical Data (Allan Hanbury, TUW)
- 15.9.2012 Presentation on Intelligent Information Access Techniques for on-line Health Information Search: a Survey of Non-Physicians, Medicine 2.0`2012 conference, Boston, the USA (Iris van der Heijden, HON)

4.2.3 Year 2

- 16.07.2012 Presentation of a Khresmoi at CITTI in Chengdu, China, a potential commercial partner (Henning Müller)
- 12.07.2012 Demo of Mimir to British Library staff in London (USFD)
- 10.07.2012 Khresmoi discussions with UK marketing manager, Lighthouse IP Group (USFD)
- 05.07.2012 Demo of Mimir to British Library staff in Sheffield (USFD)

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- 02.07.2012 and 04.07.2012 discussions of creating visualisations on top of Mimir with WebLyzard (USFD)
- 26.06.2012 Telephone discussions of Mimir use with ISO (USFD)
- 14.06.2012 Telecon discussions with UK Health Protection Agency and UK Food and Environment Research Agency (USFD)
- 4.6.2012 Presentation on Khresmoi to Wolters Kluwer staff internationally by telco (TUW)
- 23.05-24.05.2012 Poster entitled “How do non-physicians search for health information online?” presented at Doctors2.0&You conference in Paris (HON)
- 16.05.2012 Demo Mimir and discuss Khresmoi with UK Health Protection Agency in Sheffield (USFD)
- 10.04.2012 Second meeting with the Atos Research & Innovation department with the Business Development Director (ATOS)
- 23.03.2012 Presentation including Khresmoi to collaborators at South London and Maudsley Hospital, London (USFD)
- 15.03.2012 Discussions and Mimir demo with Hanzo Archives, London (USFD)
- 12.03.2012 Presentation to the Health Division at Corporation director (ATOS)
- 18.01.2012 Presentation including Khresmoi to Royal Brompton Hospital staff in Sheffield (USFD)
- 18-19.01.2012 Discussions and Mimir demo with UK Government National Archives, London (USFD)
- 16.01.2012 First Meeting with the Atos Research & Innovation department with the Business Development Director (ATOS)
- 28.12.2011 Conference call with MedTing Business Development people (ATOS)
- 21.12.2011 Presentation and show demos to ATOS Spain Innovation Director (ATOS)
- 07.12.2011 Presentation of Khresmoi work to eClinicalWorks in Sheffield (USFD)
- 6.12.2011 Santé et Mobilité - Apple, Restricted event, Presentation (HON)
- 09.11.2011 Discussions including Khresmoi with WebChartMD telecon (USFD)
- 27-28.10.2011 Health 2.0 Berlin, slides with the key findings of non-physician and physician surveys (HON)

4.2.4 Year 1

- Presentation entitled “Predicting the Future of E-Health: Where is it now, where is it heading and what is the end goal?”, Innovations in E-Health & Informatics Europe, 21 September 2011 (Allan Hanbury)
- Presentation at the Petit déjeuner - conférence Elsevier Masson, Paris, France, 21 June 2011 (Célia Boyer)
- Presentations at the Italian Patent Retrieval Symposium in Sardinia, Italy, May 2011 (Henning Müller and Veronika Stefanov)
- Presentations at the Med-e-Tel Conference, Luxemburg, 6–8 April 2011 (Allan Hanbury and Célia Boyer)

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- Presentation at the IBM Haifa Workshop on Translational Medicine, November 2010 (Henning Müller)

4.3 Symposia and Fairs

4.3.1 Year 4

4.3.1.1 CeBIT 2014

In 2014 Khresmoi participated with a booth at CeBIT for the second time (HES-SO, TUW, ATOS, MUW, UDE). For the first time the booth was exclusively for Khresmoi. One goal of this participation was to present clearly the prototypes to a larger public and get feedback on the prototypes for the preparation of the final Khresmoi prototypes tested this spring and summer. A second objective was to get commercial contacts and get linked to partners for the Khresmoi technology. Particularly on the first two days many people visited the booth, tested the technology and gave feedback. Many discussions with companies also led to technology exchange and several propositions to distribute the Khresmoi technology if products become available. The Khresmoi torso also helped to clearly brand Khresmoi as a medical project and this attracted interest of many passing persons. CeBIT is the biggest computer fair in the world with a large and extremely varied participation from the entire world but in an important part from Germany.



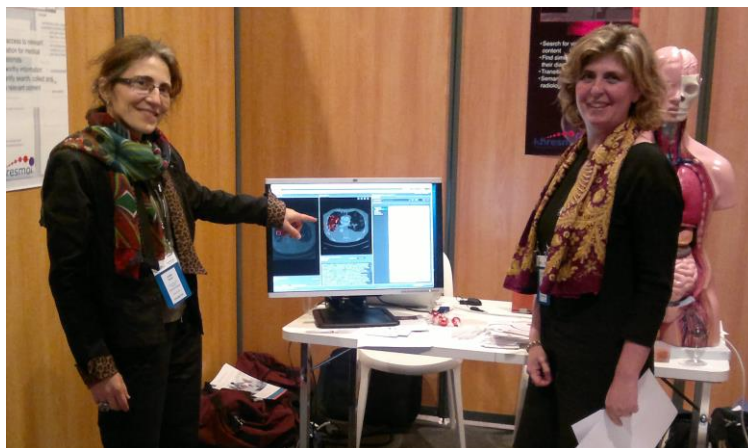
4.3.1.2 European Data Forum 2014

The European Data Forum 2014 (EDF2014) took place from March 19-20, 2014 in Athens, Greece. EDF is the annual meeting-point for data practitioners from industry, research, the public-sector and community initiatives, to discuss the opportunities and challenges of the emerging Data Economy in Europe and took place in the third edition in 2014. The Khresmoi project had a booth at the European Data Forum, where the three prototypes were demonstrated (TUW, HES-SO, CUNI). We were also honoured to be able to present the Khresmoi results to Commissioner Neelie Kroes, Vice President of the European Commission responsible for the Digital Agenda for Europe.



4.3.1.3 World of Health IT

The World Congress of Health IT Conference & Exhibition is the premier forum for the advancement of IT in healthcare in Europe. To address the needs of key stakeholders in the community of eHealth in Europe, The World of Health IT Conference & Exhibition offers professional development sessions, suppliers exhibitions, exchange of best practices, networking sessions and debates and discussions concerning the issues that will shape the future of eHealth.



The Khresmoi project has a booth at the World of Health IT, held from the 2–4 April 2014 in Nice, France (MUW, ATOS, HON, ELDA). All prototypes were presented at the booth, and the Khresmoi team present also took part in a series of pre-arranged meetings with representatives of various companies attending the event.

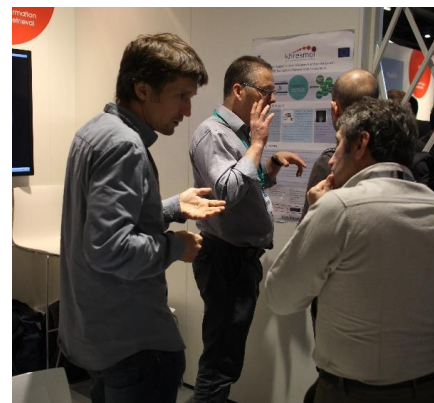
4.3.1.4 eHealth Day Sierre

On June 6, 2014 the second eHealth day took place in Sierre organised by the foundation theArk and the University of Applied Sciences and Arts Western Switzerland. All Khresmoi prototypes were shown in the main hall where coffee breaks and the lunch took place (HES-SO, TUV). Many discussions happened around the Khresmoi posters and the Khresmoi demonstrations. In total over 160 registered participants were at the event, in large part from the French part of Switzerland but also in part from the German speaking part and France. As in the past edition, the speakers came from a varied background of physicians and technical persons and from medical institutions and small companies around the world including the US, Brazil and Sweden.



4.3.1.5 ICT 2013

Khresmoi had a booth in the exhibition section of the EU ICT 2013 event in Vilnius, Lithuania on 6-8 November 2013. The ICT is Europe's biggest digital technology and innovation event. Many useful contacts were made through the extensive discussions that took place at the booth.



4.3.2 Year 3

Khresmoi was present at the booth *EU Language & Big Data Projects* at the CeBIT from the 5th to the 9th of March 2013 in Hannover, Germany (HES-SO, MUW, TUW, HON, ELDA). Other EU projects present at the booth were PROMISE, X-LIKE and RENDER. The Khresmoi prototypes were demonstrated to many visitors. This also gave us the opportunity to exchange information and results with other research projects, in particular German national projects. This event also premiered the Khresmoi golf shirts and Khresmoi pens.

5 Dissemination to the Medical Community

5.1 Publications

5.1.1 Year 4

- Wengert, Georg Johannes and Helbich, Thomas H. and Vogl, Wolf-Dieter and Baltzer, Pascal and Langs, Georg and Weber, Michael and Bogner, Wolfgang and Gruber, Stephan and Trattnig, Siegfried and Pinker, Katja. Introduction of an Automated User-Independent Quantitative Volumetric MRI Breast Density Measurement System using the Dixon Sequence: Comparison with Mammographic Breast Density Assessment. In *Investigative Radiology* (accepted), Year 2014.
- Markonis, Dimitrios and Langs, Georg and Donner, René and Holzer, Markus and Schlegl, Thomas and Müller, Henning. A System for Visual Information Retrieval in Images, Radiology Reports and the Medical Literature. RSNA demonstration. Year 2013.

5.1.2 Year 3

- Valentinitich, Alexander and Patsch, Janina M and Deutschmann, Julia and Schueller-Weidekamm, Claudia and Resch, Heinrich and Kainberger, Franz and Langs, Georg. Automated threshold-independent cortex segmentation by 3D-texture analysis of HR-pQCT scans. In *Bone*, (51) 3: 480-7, Year 2012.
- Langs, Georg and Donner, René and Burner, Andreas and Holzer, Markus and Birngruber, Erich and Markonis, Dimitrios and Müller, Henning. Fast Content-based Visual Retrieval of Radiology Cases in Hospital Systems. RSNA. Year 2012.

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- Valentinitisch, Alexander and Patsch, Janina M and Burghardt, Andrew J and Link, Thomas M and Majumdar, Sharmila and Fischer, Lukas and Schueller-Weidekamm, Claudia and Resch, Heinrich and Kainberger, Franz and Langs, Georg. Computational identification and quantification of trabecular microarchitecture classes by 3-D texture analysis-based clustering. Bone 54(1), 133-140, Elsevier, Year 2013.
- Müller, Henning. Semantik und Bilddaten: wie Terminologien in der Radiologie helfen könnten. Deutscher Roentgenkongress. Year 2013.
- Langs, Georg and Donner, René and Holzer, Markus and Markonis, Dimitrios and Müller, Henning and Birngruber, Erich. Fast search for radiology cases in hospital systems via content-based image retrieval. European Congress of Radiology. Year 2013.
- Kotter, Elmar and Müller, Henning. Semantics in radiology. ECR. Year 2013.

5.1.3 Year 2

- Dimitrios Markonis, Adrien Depeursinge, Ivan Eggel, Antonio Foncubierta-Rodríguez and Henning Müller, Accessing the medical literature with content-based visual retrieval and text retrieval techniques, in: Proceedings of the Radiological Society of North America (RSNA), Chicago, Illinois, US, 2011

5.1.4 Year 1

- Matthias Samwald. Suchen und Finden. In: Das österreichische Gesundheitswesen - ÖKZ, July 2011.

5.2 Presentations

5.2.1 Year 4

- 12.6.2014 Meeting at Sheffield Children's Hospital, Sheffield, UK (Angus Roberts, USFD)
- 23.5.2014, Presentation at European Psychiatric Association Epidemiology Section, Ulm, Germany (Angus Roberts, USFD)
- 9.5.2014, Teleconference with Bioinformatics Department Guy's Hospital, London, UK (Angus Roberts, USFD)
- 5.2014, Presentation at Icahn School of Medicine at Mount Sinai, Function based neuro-image alignment, New York, USA (Georg Langs, MUW)
- 4.4.2014, Presentation to Intravacc, Bilhoven, Netherlands (Angus Roberts, USFD)
- 3.4.2014, Presentation to Fastvac consortium, Amersfoort, Netherlands (Angus Roberts, USFD)
- 20.3.2014, Presentation at Institute of Psychiatry, London, UK (Angus Roberts, USFD)
- 5.3.2014, Presentation to Sheffield Teaching Hospitals Department of Oncology, Sheffield, UK (Angus Roberts, USFD)
- 3.2014, Presentation at Gesellschaft der Aerzte Wien, Austria, Medical image retrieval and the KHRESMOI clinical prototype (Georg Langs, MUW)
- 18.2.2014, Meeting with epiGenesys, Sheffield, UK (Angus Roberts, USFD)

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- 4.2.2014, presentation of Khresmoi at the hospital in Freiburg, Germany, (Henning Müller, HES-SO)
- 10.12.2013, Meeting with Sheffield Teaching Hospitals Medical Physics Department, Sheffield, UK, (Angus Roberts, USFD)
- 1-6.12.2013, Booth presenting the Khresmoi Radiology prototype, RSNA Annual Meeting, Chicago, USA (HES-SO, MUW)
- 20.11.2013, Meeting with Sheffield Teaching Hospitals Radiology Department, Sheffield, UK (Angus Roberts, USFD)
- 11.10.2013, Presentation at Sheffield Cancer Research Workshop, Sheffield, UK (Angus Roberts, USFD)
- 9.10.2013, Tutorial and invited presentation on semantics in radiology and the conference Management in Radiology, Barcelona, Spain (Henning Müller, HES-SO)
- 16.09.2013, Meeting at UK Department for Environment Food & Rural Affairs with Public Health England, London, UK (Angus Roberts, USFD)

5.2.2 Year 3

- 1.7.2013–5.7.2013 Khresmoi was featured in Presentations and demos at the Institute of Psychiatry training event, London, UK (Angus Roberts, Mark Greenwood, USFD)
- 15.5.2013 Presentation at Public Health England meeting (Angus Roberts, Valentin Tablan USFD)
- 11.3.2013 Presentation at the ECR EIBIR IMAGINE workshop on Novel Technology that Shapes Radiology on efficient visual image search in clinical radiology (René Donner, MUW)
- 7.3.2013 Oral and poster presentation at ECR on computational texture analysis in interstitial lung disease: comparison of descriptors and classification accuracy (Joachim Ofner, MUW)
- 7.3.2013 Presentation at ECR on fast search for radiology cases in hospital systems via content-based image retrieval (René Donner, MUW)
- 15.01.2013 Talk at Institute of Psychiatry, London (Angus Roberts, USFD)
- 6.12.2012 RSNA 98th Scientific Assembly and Annual Meeting. Fast Content-based Visual Retrieval of Radiology Cases in Hospital Systems (Georg Langs, MUW)
- 6.12.2012 RSNA 98th Scientific Assembly and Annual Meeting. Fast and Accurate Automatic Localization of Anatomical Structures in Multi-Model Data using Pre-filtered Hough Forests and Discrete Optimization (René Donner, MUW)

5.2.3 Year 2

- 12.7.2012 Presentation on Khresmoi at Tsinghua University Hospitals, Beijing, China (HES-SO)
- 11.7.2011 Presentation on Khresmoi at Beijing Navy Hospital, Beijing, China (HES-SO)
- 10.7.2012 presentation on Khresmoi at Beijing Capital Medical University, Beijing China (HES-SO)
- 28.06.2012 Invited talk, KCL British Medical Association meeting, London (USFD)

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- 25.06.2012 Demonstrate Mimir over life science data to UK Health Protection Agency (USFD)
- 27.4.2012 American Society of Neuroradiology (ASNR) talk on Machine Learning in Neuroradiology (Atlas building), New York, USA (MUW)
- 06.02.2012 Presentation including Khresmoi to collaborators at Guy's Hospital, London (USFD)
- 06.02.2012 Presentation including Khresmoi to potential users at Royal Brompton Hospital, London (USFD)
- 27.11.2012-02.12.2012 Presentation of a demo and of the following papers (HES-SO):
 - *Using Eye Tracking on a Clinical Viewing Station to Help Investigate Image Search Requirements of Radiologists*
 - *Accessing the medical literature with content-based visual retrieval and text retrieval techniques*
- 17.10.2011 Invited talk, UK National Institute of Health Research workshop Guy's Hospital London - Presentation and discussion of Khresmoi (USFD)
- 09.2011 Invited presentation at the pharmacy summer school on biomedical visual information retrieval in Zermatt, Switzerland (HES-SO)

5.2.4 Year 1

- Presentation *Internet un outil de santé publique* at the Journées Euro Cos 2011 (Groupe pluri-professionnel européen de réflexion et de formation en santé), Strasbourg, France (Célia Boyer, 15/4/2011)
- International Agency for research on Cancer, teleconference discussion including use of Mimir (29/03/2011, Angus Roberts, Vassil Momtchev)
- Member of panel, NHS eHealth Masterclass, University of Edinburgh (Angus Roberts, 08/03/2011)
- Demonstration to clinical researchers, Sheffield Teaching Hospital (Angus Roberts, 07/12/2010)
- Presentation at the Medicine 2.0'10 Conference, Maastricht, the Netherlands (Natalia Pletneva, 29/11/2010)
- 3 Presentations at the Iranian Congress of Radiology (ICR) in Tehran, Iran, 2011 (Henning Müller, 13/05/2010)

5.3 Presence of Khresmoi at Symposia

5.3.1 Year 4

As the final user evaluations in year 4 were all conducted at medical conferences, dissemination was carried out as part of the events.

The table below shows all the events where user tests and dissemination were carried out:

Event name (user tests)	Details	Audience	Where?	When?
STAFAM	Biggest conference for general practitioners in Austria	Mainly general practitioners	Graz Stadthalle, Austria	28.11-30.11.2013
Praxis update Wiesbaden	Medical CME conference for practitioners	Mainly general practitioners	Wiesbaden Kurhaus, Germany	16.5-17.5.2014
Other medical events	Symposium für den Endokrinen Kreis (Conference for Endocrinologists)	Mainly specialists, hospital clinicians and research physicians.	Society of Physicians, Vienna, Austria	23.5-25.5.2014
	Veranstaltung AESCULAP	Mainly research physicians.	Society of Physicians, Vienna, Austria	11.6-12.6.2014,
	„Medizin im ersten Weltkrieg“ Fortbildungsveranstaltung der Gesellschaft der Ärzte in Wien (CME Event of GAW)	Mainly specialists, hospital clinicians, research physicians.	Society of Physicians, Vienna, Austria	17.6.2014

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The following image shows the booth at the STAFAM in Graz, with evaluation of Khresmoi Professional taking place:



Additional events held at the Society of Physicians in Vienna (GAW) where active Khresmoi Professional dissemination was conducted by demonstration and information are listed in the following table:

When?	Name of event
19.07.2014	2. Wiener Colloquium Orthomolekulare Medizin 2014
05.07.2014	Medizin im Museum: Österreichische Gesellschaft für Geriatrie und Gerontologie
24.06.2014	Präsentation der ausgewählten Habilitationen des Jahres 2013 für den von Siemens AG Österreich zur Verfügung gestellten „OTTO-KRAUPP-PREIS 2014“
11.06.2014	Management der stabilen koronaren Herzkrankheit im Kreuzfeuer
04.06.2014	40 Jahre Mutter-Kind-Pass
02.06.2014	Med Monday – HNO
24.10–25.10.2013	Alternative Medicine Conference mainly for specialists of internal medicine
18.10-19.10.2013	Kinderhaut-Conference for paediatricians and dermatologists

5.3.2 Year 3

Khresmoi results were presented by MUW at a booth at the IMAGINE exhibit of the European Congress on Radiology (ECR), the largest radiology congress in Europe that gathered over 20,000 participants from 102 countries, from March 7th to March 11th 2013. KHRESMOI participated in the IMAGINE exhibit, with a booth and a prototype demo during the entire congress duration. An article on Khresmoi was also published in the *ECR Today* congress magazine. The IMAGINE exhibit is significant, since it not only aims at presenting applicable technology to radiologists, but also to communicate work in progress among the medical image analysis community. Both aspects are very valuable for Khresmoi. We could reflect on the applicability of the prototype with radiologists, while at the same time discussing methodological details among peers in the computer science field.

Khresmoi partner MUW was present at the yearly congress of the Radiological Society of North America (RSNA), from November 25th to November 30th 2012. This congress is the primary forum for radiologists and connected health care professionals, with about 55,000 participants. Khresmoi had 3 educational exhibits that demonstrated Khresmoi prototypes, explained the underlying technology, and high-lighted the prime challenges in the context of content based information retrieval in the clinic. Over 5 days we presented results, and offered participants to try the prototype aimed at radiologists. In addition to the exhibit, the RSNA presented the opportunity to discuss the potential impact of retrieval in the context of advancing clinical data management and ever growing data repositories.

5.3.3 Year 2

Khresmoi results were presented at a booth at the IMAGINE exhibit of the European Congress on Radiology (ECR), the largest radiology congress in Europe that gathered over 20,000 participants from 102 countries, from March 1st to March 3rd 2012. The demonstrations of fully automatic anatomy identification and pathology retrieval – the building blocks of the search engine – spurred lively discussions about the performance and impact on the clinical radiology workflow. A brief overview article appeared in the daily ECR newspaper. (MUW)

5.3.4 Year 1

- Stand showing the radiology work at the European Conference on Radiology (ECR) 2011, 3–7 March 2011 in Vienna, Austria. Radiologist questionnaires were also distributed.
- KHRESMOI Factsheets were distributed at the Doctors 2.0 Conference, 22–23 June 2011 in Paris, France.

5.4 Other

The Association of Physicians in Vienna (GAW) has continued its awareness campaign among its members, including weekly distribution of Khresmoi Folders during medical seminars and conferences held at the Society. In particular, the society of physicians had in June and July 2014 a permanent Khresmoi booth located in the lobby near the entrance of the society (see photo below). This allowed all members visiting the society to have the opportunity to inform themselves about Khresmoi and raised awareness on how to access Khresmoi Professional. Prior to medical events taking place at the society a GAW/Khresmoi member was present at the booth and



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informed interested physicians about the system. Furthermore, demonstration videos illustrating Khresmoi Professional features and tools were played on repeat to further attract physicians to visit the booth and inform on a larger scale. During big dissemination events and user test events, flyers, Khresmoi USB sticks and Khresmoi pens were disseminated to further raise awareness and pursue dissemination. Furthermore, physicians had the opportunity to ask questions about the system.

Online feedback about the Khresmoi Professional prototype was solicited. Link dissemination took place via e-mail, social media platforms, and the GAW homepage and during all Khresmoi dissemination events held at the society of physicians in Vienna from 3.6.2014 to 13.07.2014.

News about the Khresmoi publication in the Journal of Medical Internet Research was included in the GAW newsletter on the 28th of June 2013.

In project year 1, a campaign of newsletters, e-mailings and banners on websites was carried out to promote the Khresmoi physicians' survey. Details on this campaign are in Deliverable D8.1.2, Section 2. A total of 560 physicians responded to the survey, indicating the good infiltration that this campaign had.

6 Dissemination to the Public

6.1 Year 4

Two Khresmoi newsletters were released online in year 4, and also announced on the Khresmoi public mailing list and linked in group:

- Newsletter 5 – October 2013 – <http://khresmoi.eu/assets/Newsletter/newsletter5-khresmoi.pdf>
- Newsletter 6 – August 2014 – <http://khresmoi.eu/assets/Newsletter/newsletter6-khresmoi.pdf>

Printed folders in English, French and German with general Khresmoi information were updated to a 2014 version reflecting the progress within Khresmoi, and distributed at many events (for all dissemination target groups).

Khresmoi was again presented to patients at the Hôpital Georges Pompidou in Paris, France during the end user tests in July 2014.

Khresmoi has received exposure in the following forums:

- Walliser Bote: IT-Forschende trafen sich in Evolène - <http://khresmoi.eu/assets/Press/2014.07.08WBIT-Forschende.pdf>
- Le Nouvelliste: Chercheurs réunis - <http://khresmoi.eu/assets/Press/2014.09.07LeNouvellisteChercheurs.pdf>
- CNGL Blog (DCU): <http://www.cngl.ie/blog/cngl-affiliated-project-interview-khresmoi-medical-information-analysis-retrieval/>
- Computer World Spain: <http://www.computerworld.es/sociedad-de-la-informacion/la-busqueda-semantic-inteligente-de-textos-e-imagenes-ayuda-a-la-medicina>
- PC World Mexico: <http://www.pcworld.com.mx/Articulos/32947.htm>
- TICbeat: <http://innovacion.ticbeat.com/proyecto-khresmoi-busqueda-semantic-informacion-medica/>
- MUW Press Release: [http://www.meduniwien.ac.at/homepage/news-und-topstories/?tx_ttnews\[tt_news\]=4617&cHash=d1655d08e4](http://www.meduniwien.ac.at/homepage/news-und-topstories/?tx_ttnews[tt_news]=4617&cHash=d1655d08e4)

6.2 Year 3

Heath On the Net has continued to be in contact with various patient organisations, especially with the aim of recruiting people to take part in the user-centred evaluations of the Khresmoi system. In particular, Khresmoi has been presented to and discussed with the following organisations: the Diabetes Education Study Group (<http://www.desg.org/>), La Ligue Contre le Cancer in France (<http://www.ligue-cancer.net/>) and the Swiss Patient Organisation (l'Organisation Suisse de Patients, <http://www.spo.ch/>). Khresmoi was also presented to patients at the Hôpital Georges Pompidou in Paris, France during the end user tests in July 2013.

The Khresmoi prototype was shown on television on Canal9Valais in Switzerland on the 17th of April 2013 (<http://www.youtube.com/watch?v=EgXJn1yz5kU>).

Printed folders in English, French, German and Spanish with general Khresmoi information were updated to a 2013 version reflecting the progress within Khresmoi, and distributed at many events (for all dissemination target groups).

The fourth Khresmoi newsletter was released online in October 2012 (<http://www.khresmoi.eu/assets/Newsletter/newsletter4-khresmoi.pdf>).

6.3 Year 2

Heath On the Net has contacted a number of patient organisations, especially with the aim of recruiting people to take part in the user-centred evaluations of the Khresmoi system. In particular, Khresmoi has been presented to and discussed with the following organisations: the Diabetes Education Study Group (<http://www.desg.org/>), La Ligue Contre le Cancer in France (<http://www.ligue-cancer.net/>) and the Swiss Patient Organisation (l'Organisation Suisse de Patients, <http://www.spo.ch/>).

The Khresmoi search prototype and image search was presented for the Girls' Day at UDE, an open house style event.

Khresmoi was covered in the following media:

- June 11, 2012: Khresmoi on Wolters Kluwer Solutions Blog: <http://solutions.wolterskluwer.com/blog/2012/06/the-khresmoi-integrated-project-automated-annotation-of-medical-texts/>
- November 2011: EPFL newsletter: http://newsletter.epfl.ch/alliance/newspaper-article?np_id=1122&np_eid=89&catid=22

Printed folders in English, French, German and Spanish with general Khresmoi information were prepared and distributed at many events (for all dissemination target groups).

The third Khresmoi newsletter was released online in April 2012 (<http://khresmoi.eu/assets/Newsletter/newsletter3-khresmoi.pdf>). The 4th newsletter is planned for September 2012.

6.4 Year 1

We prepared the following printed dissemination materials with general KHRESMOI information:

- Folder in English
- A4 fact sheets in English, French and German

- KHRESMOI A1 poster

A KHRESMOI Newsletter was prepared after the Kick-off meeting, and the second Newsletter will be available in August 2011.

A campaign of newsletters, e-mailings, banners on websites and publicity on Facebook, LinkedIn and Twitter was carried out to promote the KHRESMOI general public survey. Details on this campaign are in Deliverable D8.1.1, Section 5.3.

7 Training

7.1 Summer Schools

7.1.1 Year 4

Allan Hanbury (TUV) and René Donner (MUW) both held Khresmoi-related presentations at the Summer School on Image Processing (SSIP) 2014, held from the 9th to 18th of July 2014. The presentations were:

- 16.7.2014, Evaluation in Medical Image Processing and Search (Allan Hanbury, TUV)
- 19.7.2014, Anatomical Structure Localization in 2D and 3D Medical Image Data (René Donner, MUW)

Angus Roberts (USFD) featured Khresmoi in presentations at the GATE Summer School, Sheffield, UK, held from the 9th to the 13th of June 2014.

7.1.2 Year 3

Khresmoi sponsored the Summer School on Image Processing (SSIP) 2013, held from the 4th to the 13th of July at the University of Pannonia in Veszprém, Hungary. René Donner (MUW) and Allan Hanbury (TUV) held lectures at this summer school.

Georg Langs (MUW) gave an invited presentation at the Biomedical Image Analysis Summer School: Modalities, Methodologies & Clinical Research at the Ecole Centrale de Paris, Paris, France.

Sascha Kriewel (UDE) gave a presentation on Khresmoi at the EU Summer School on Information Foraging 2013 in Nijmegen, the Netherlands.

Kalina Bontcheva (USFD) gave a presentation on Semantic Search at the PROMISE Winter School 2013 in Bressanone, Italy.

Khresmoi was featured in presentations at the GATE Summer School held in Sheffield, UK from 3–7 June 2013 (Angus Roberts, USFD)

7.1.3 Year 2

Khresmoi partners TUV and MUW were the main organisers of the Summer School on Image Processing from July 4th to July 13th in Vienna.

HES-SO contributed to the organization of a winter school on information retrieval in Zinal, Switzerland from January 23rd to January 27th organized under the auspices of the PROMISE network of excellence with which Khresmoi has established a strong partnership.

A course on Domain-specific Search was held at this summer school from August 6th to August 10th 2012. This included a lecture on medical IR (TUV, funded by the MUMIA COST Action).

7.1.4 Year 1

- GATE Summer School - multiple demonstrations, 16-20 May 2011
- Two presentations at the Summer School on Image Processing (SSIP) 2011 in Szeged, Hungary, 7-16 July 2011:
 - Studying the Structure of Cognition: Machine Learning and Neuroimaging (Georg Langs)
 - Multimodal Information Retrieval Evaluation (Allan Hanbury)

KHRESMOI sponsored the SSIP 2011 by paying the travel and accommodation for Vladimir Kolmogorov from University College London to give a talk. KHRESMOI also sponsored a student grant at the GATE Summer School.

7.2 Inclusion of Khresmoi Material in Lectures

7.2.1 Year 4

- November 2013 - Part of lecture on “Multimedia Information Retrieval”, Dublin City University (Liadh Kelly)

7.2.2 Year 3

- June 2013 - Part of lecture on “Medical Image Processing”, Vienna University of Technology (Georg Langs)
- June 2013 - Part of the lecture on “Internet Search Engines” (chapter on evaluation), University of Duisburg-Essen (Norbert Fuhr)
- May 2013 - Part of lecture on “Information Engineering”, University of Duisburg-Essen (Norbert Fuhr)
- March-June 2013 - Part of seminar series “Computer Vision”, Medical University of Vienna (Georg Langs)
- December 2012 - Part of lecture on “Internet Search Engines” (chapter on evaluation), University of Duisburg-Essen (Norbert Fuhr)
- October 2012 - February 2013 - Student Project “Interactive help for a search system”, University of Duisburg-Essen (Matthias Jordan, Thomas Beckers)

7.2.3 Year 2

- January 2012 - Part of Lecture on "Information Engineering" (UDE)
- October 2011 - February 2012 - Student Project "[i]Control: Searching with Eye tracking" on using assistive technology to support health information searching of people with disabilities (UDE)
- December 2011 - Part of Lecture Series "Computerunterstützte Diagnose und Therapie" (Computer-assisted diagnosis and therapy), University of Vienna, Austria (MUW)

7.2.4 Year 1

- 14.04.2011 - Lecture on "Search for Health Information", Information Search and Interaction, 623.412 Selected Topics in Interactive Systems, University of Klagenfurt, Austria (Allan Hanbury)
- 24.03.2011 - Lecture on "IR for Healthcare", Domain-Specific Information Retrieval, 183.578 - Seminar aus Medieninformatik, Vienna University of Technology, Austria (Allan Hanbury)

8 Plan for Continued Activity Subsequent to the Project

The results of the CLEF eHealth evaluation campaign will be presented at a workshop during the CLEF conference in Sheffield, UK, from 15-18 September 2014.

A chapter entitled *Domain-Specific Search* by M. Lupu, M. Salampasis and A. Hanbury will appear in the book *Professional Search in the Modern World*, to be published by Springer in late 2014. It contains extensive material based on results obtained in Khresmoi.

A number of journal articles about Khresmoi results have been submitted and are currently under review. If they are accepted, they will only be published after the end of the project.

The Khresmoi webpage will be maintained in its final state and with its current URL for at least 5 years after the project end. The news section on the website will continue to be updated with news of follow-up activities using Khresmoi outcomes. Sustainability activities in WP12 will ensure that the prototypes remain online for at least a year after the end of the project.

9 Conclusion

The Khresmoi output aimed at the research community has remained at the high level achieved in Khresmoi year 3, but further scientific output will take place after the project end, in particular through journal publications that have been submitted but are still under review. The Khresmoi deliverables have been downloaded often from the Khresmoi website, with the deliverables related to the use cases for the general public and medical professionals (WP8) receiving particular interest during year 4. In particular, Deliverable 8.2 has been downloaded 2900 times in year 4, and a total of 4300 times since becoming available on the website in project month 19.

The prototypes were demonstrated at various high impact events, including the CeBIT 2014, Annual meeting of the Radiological Society of North America (RSNA) and the World of Health IT. Dissemination to the medical community was a focus in year 4, with booths at the STAFAM, the largest congress of General Practitioners in Austria; at the Praxis Update Wiesbaden, a Continuing Medical Education event for physicians in Germany; and at multiple medical events organised by the Association of Physicians in Vienna. The activities targeted at the business community were increased in year 4.

All three Khresmoi prototypes are accessible online. Khresmoi for Everyone and Khresmoi Professional can be used by all, while Khresmoi Radiology can only be used after obtaining a password due to the sensitive nature of the radiology images searched. Nevertheless, visitors to the Khresmoi Radiology page can view a video of the system in action.