

KHRESMOI

Medical Information Analysis and Retrieval

Integrated Project

Budget: 10 Million Euro
EU Contribution: 8 Million Euro
Partners: 12 Institutions
9 Countries
Duration: 4 Years
1 Sep 2010 - 31 Aug 2014

Project Coordinator:

Henning Müller
University of Applied Sciences Western Switzerland

Scientific Coordinator:

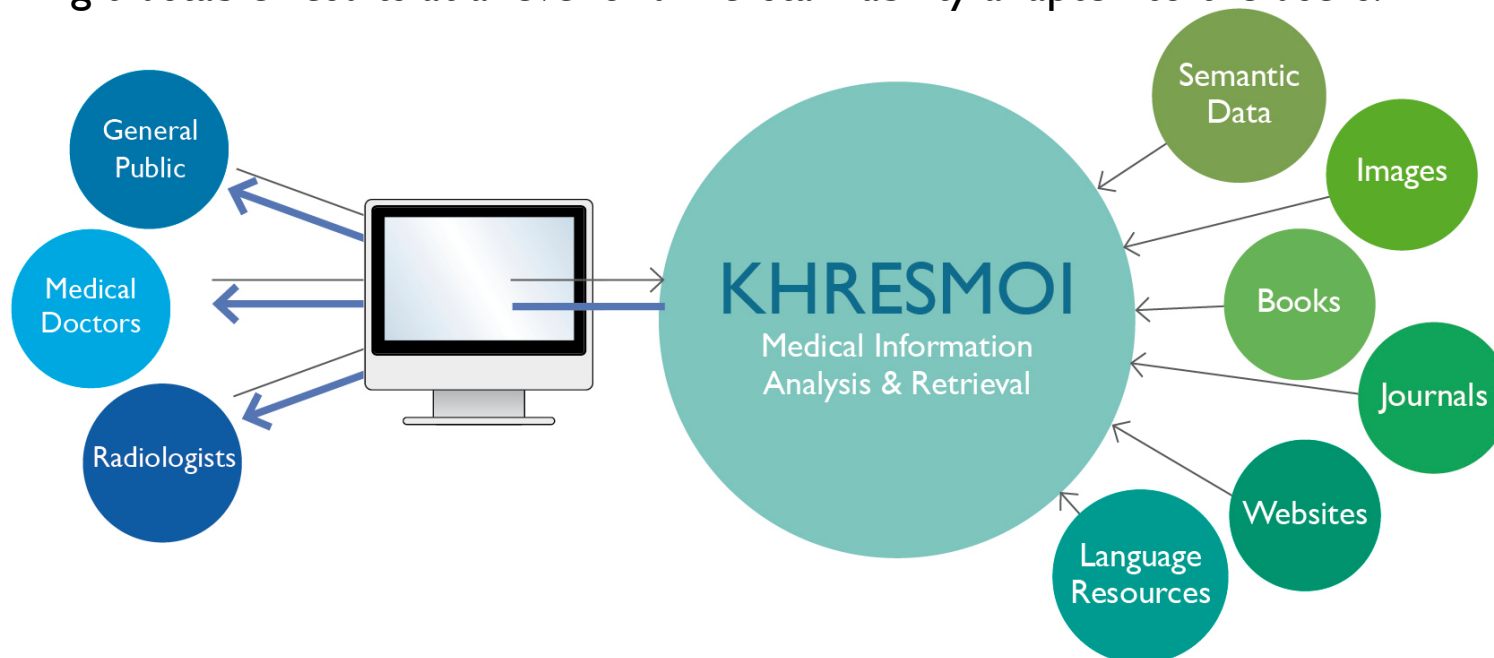
Allan Hanbury
Information Retrieval Facility, Austria



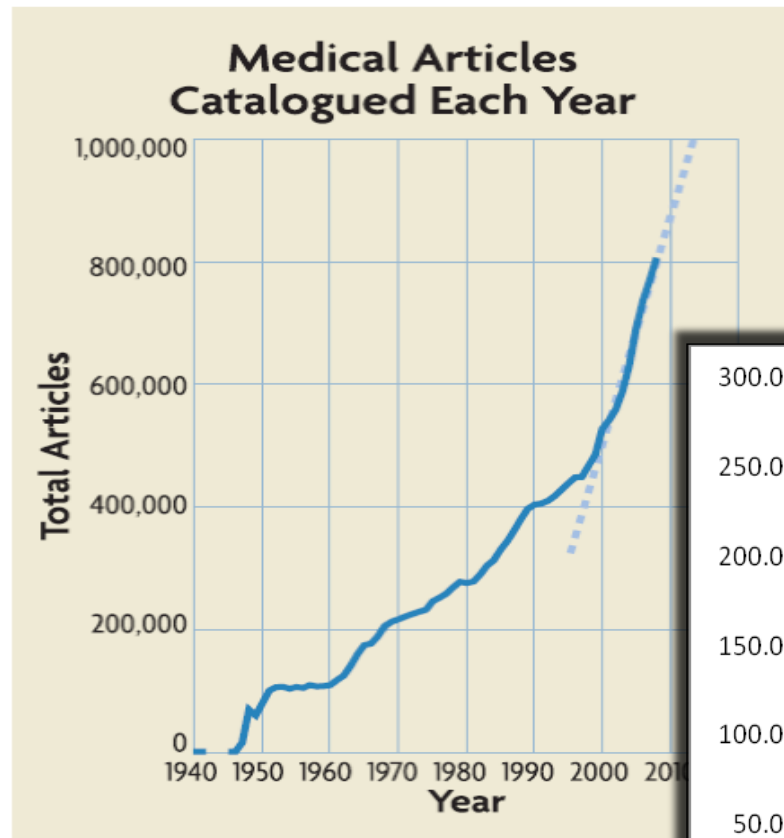
Objectives

KHRESMOI aims to build a multi-lingual, multi-modal search and access system for biomedical information and documents. The system will allow access to biomedical data:

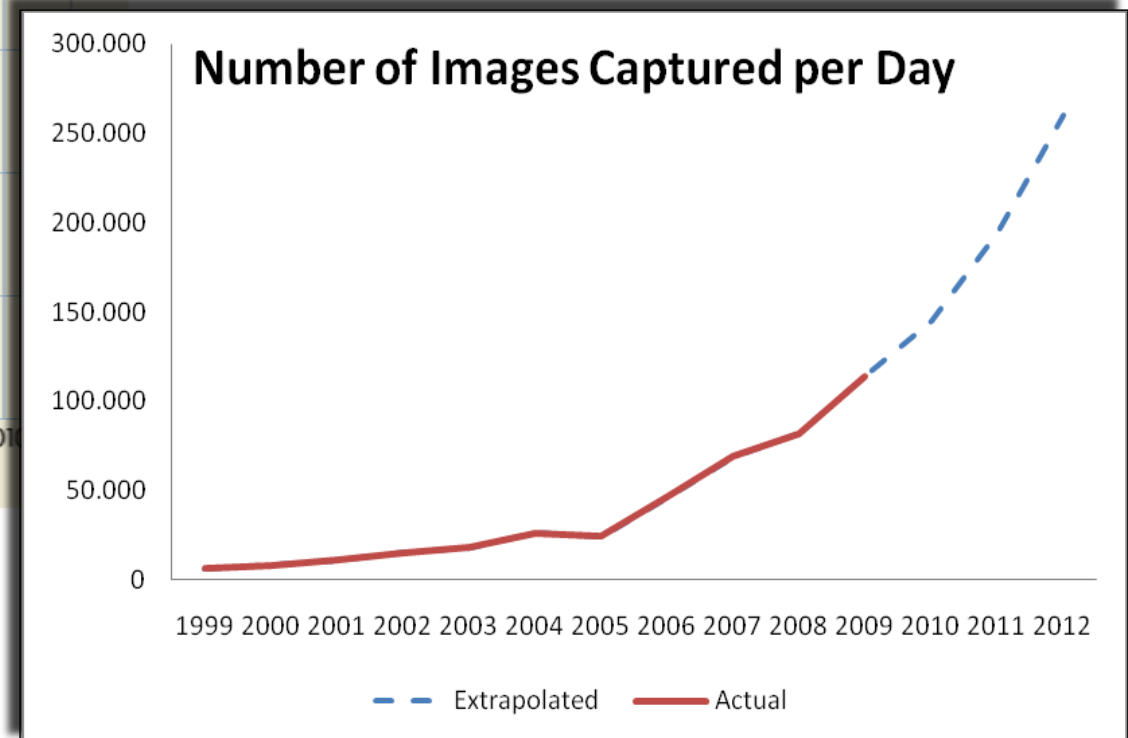
- from many sources,
- analyzing and indexing multi-dimensional (2D, 3D, 4D) medical images,
- with improved search capabilities due to the integration of technologies to link the texts and images to facts in a knowledge base,
- in a multi-lingual environment,
- providing trustable results at a level of understandability adapted to the users.



Information Explosion

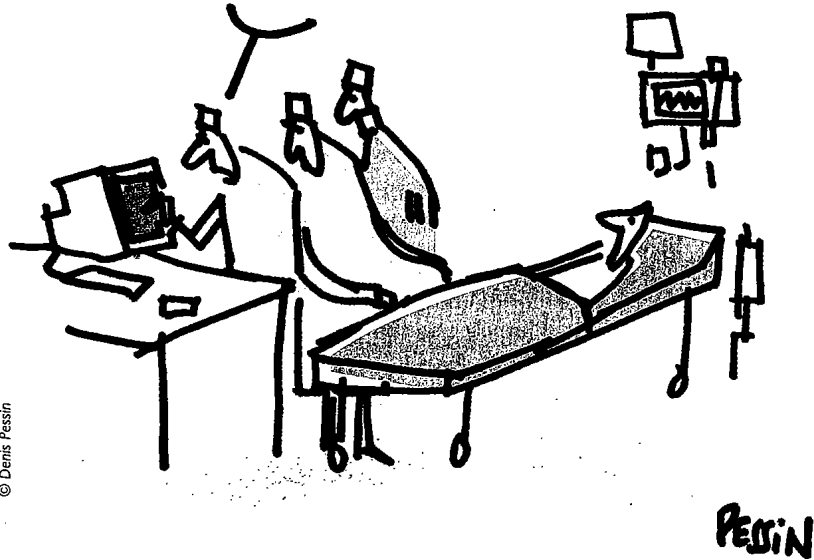


Source: Microsoft Research 2009



E-Health Information and E-Patients

DOES IT HURT
WHEN I PRESS HERE?



"I'M SORRY DOCTOR, BUT AGAIN I HAVE TO DISAGREE."

General Public

Seeking medical information online

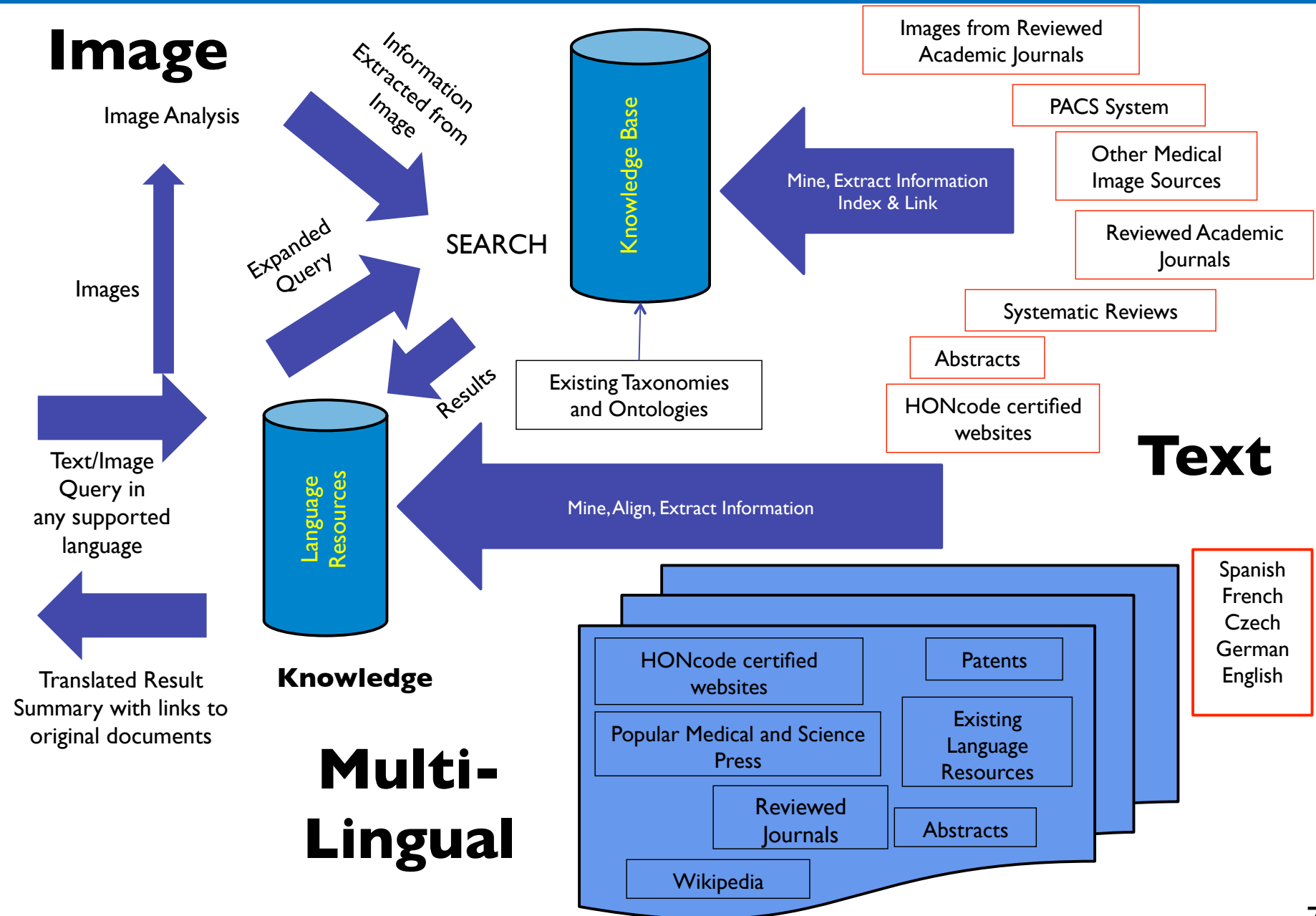
Medical Doctors

Need rapid and accurate answers

Radiologists

Drowning in images

End Users: General Public, Medical Doctors, Radiologists



KHRESMOI aims to develop a multi-lingual multi-modal search and access system for biomedical information and documents. This will be achieved by:

Automated information
extraction

- biomedical documents
- crowd sourcing
- active learning
- automated estimation of the level of trust
- target user expertise

Automated analysis and
indexing for medical
images

- 2D (X-Rays)
- 3D (MRI, CT)
- 4D (fMRI, MRI over time)

Linking information
(biomedical texts and
images)

- unstructured
- semi-structured

Cross-language search
and adaptive user
interfaces

- multilingual queries
- machine translation
- interactive visualizations

Impact

Medical Impact

- Improve the access to medical information for doctors, so that they have more time to talk to and to treat patients, having all the information required for doing so more effectively.
- Convert the flood of radiological image data into a boon instead of a curse.

Scientific Impact

- Address the lack of publicly available large-scale data sets and realistic task-based scenarios on which to assess new technologies.
- Make available cutting edge techniques implemented in open source software.

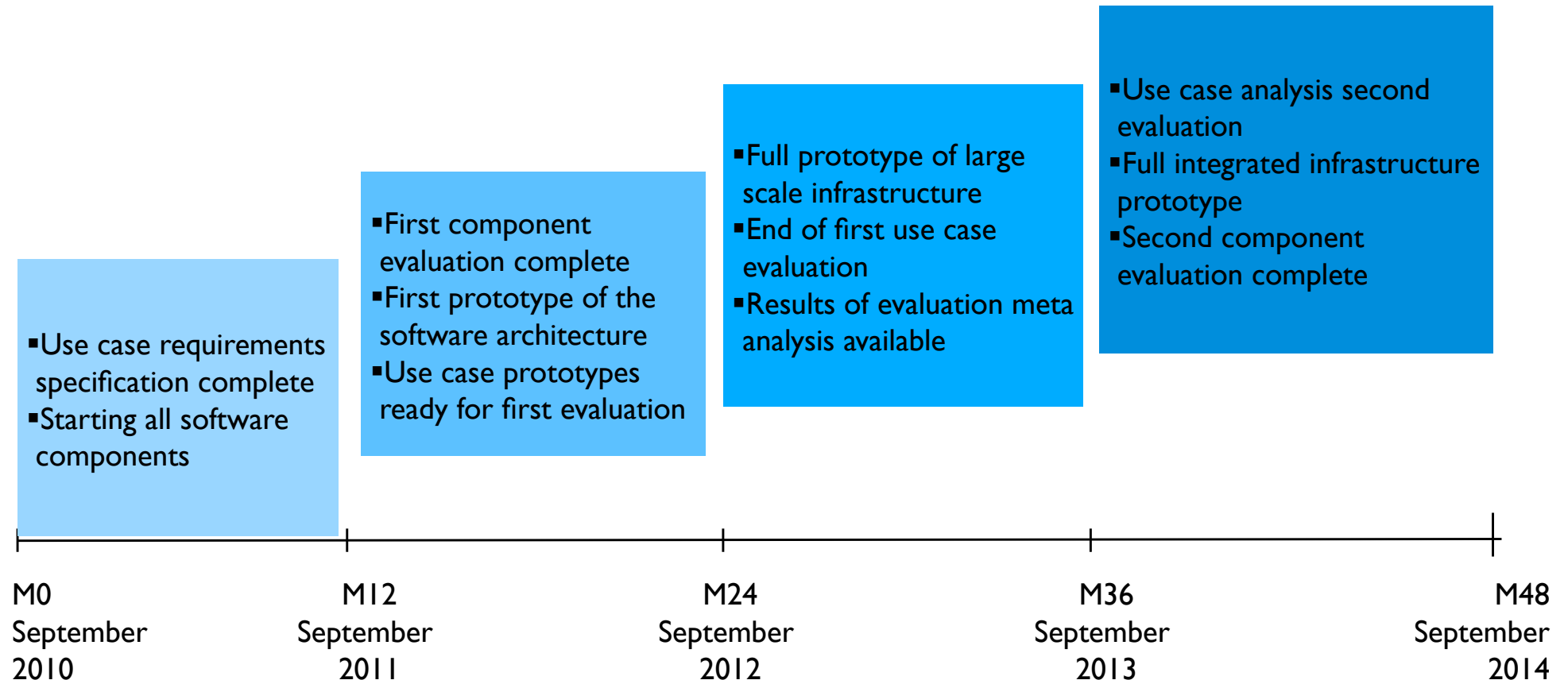
Industrial Impact

- Improve existing open source products' stability, features and performance, and hence their attractiveness and suitability for wider deployment.

Public Impact

- Members of the public will be using the Health on the Net search engine, improved by the KHRESMOI technology, relatively early in the project.

Project timeline



Khresmoi & The Digital Agenda

- Khresmoi is addressing the societal challenge of quality assessment of health information online as well as the rise of large data in the medical context.
- It happens in line with the aim of the Digital Agenda 2020 to deliver sustainable economic and social benefits from a digitally grounded market based on the efficient combination of existing technologies and interoperable applications with an open source perspective.
- Its results will continuously be integrated into new architectures for robust and scalable biomedical information search.

www.khresmoi.eu