Information tool for support activities in supervision for nuclear and radiation safety

Intellectual information system of the Gosatomnadzor employee to ensure control (supervision) in the field of nuclear and radiation safety

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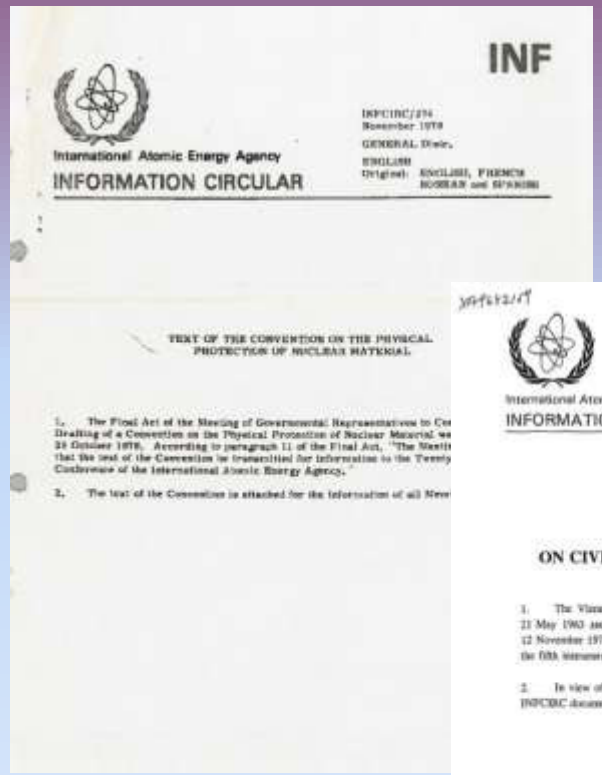

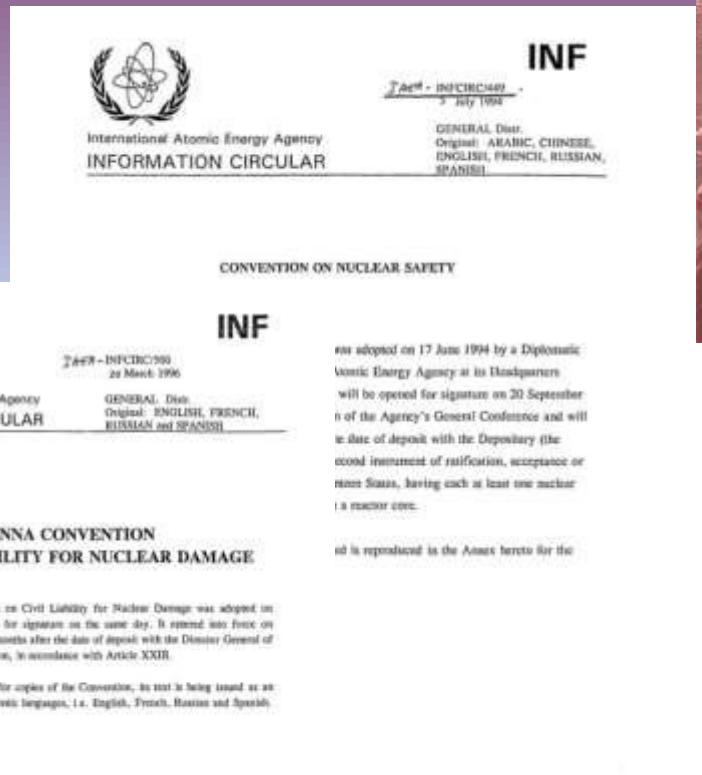

The IAEA occurs close monitoring for the safety of nuclear material, sources of ionizing radiation, radioactive waste and spent nuclear material.

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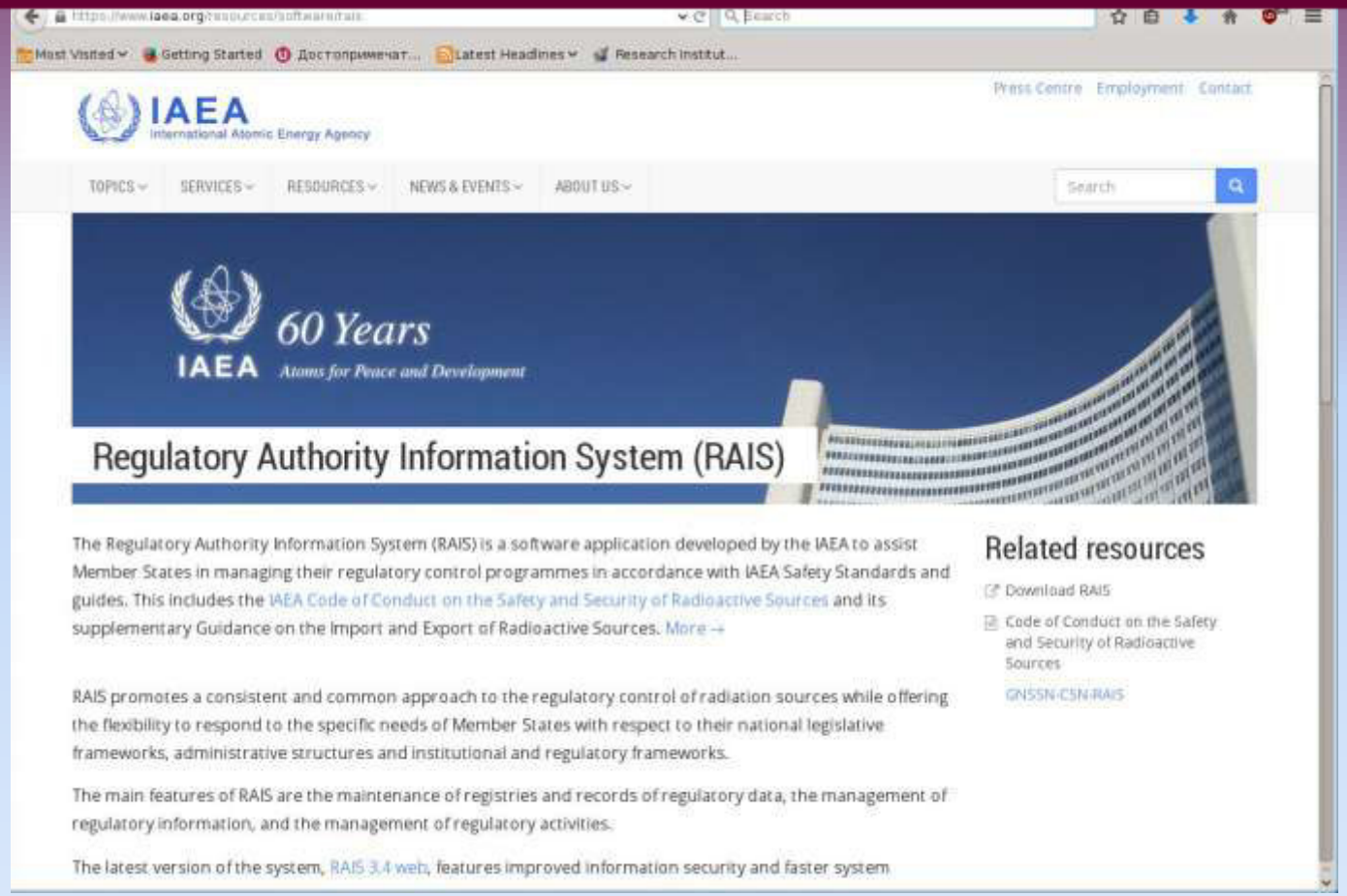
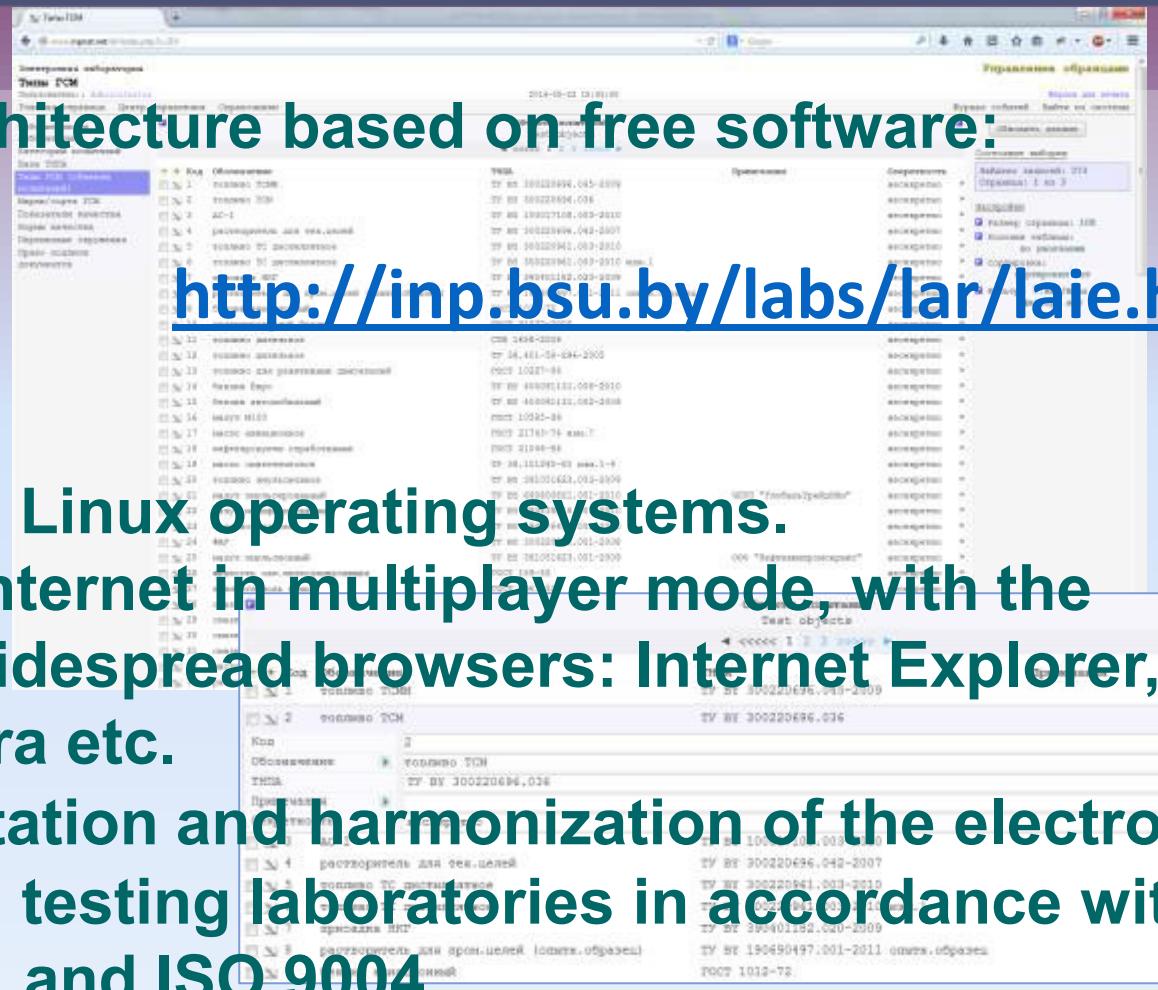


The main problems of RAIS are the following:

1. **RAIS works only on Windows with certain versions of SQL Server .**
2. **Translation of interface in Russian is not finished.**
3. **RAIS does’t satisfy to national legislation.**

http://www-ns.iaea.org/tech-a.reas/regulatory-infrastructure/rais.asp?s=3

Electronic Document Management System of Accredited Testing Laboratory eLab



System eLab has a client-server architecture based on free software:

- Debian GNU/Linux,
- Web-server Apache,
- the Firebird database server,
- PHP application server.

http://inp.bsu.by/labs/lar/laie.html

The system runs under Windows and Linux operating systems.

The work is carried out through the Internet in multiplayer mode, with the division of access rights by way of widespread browsers: Internet Explorer, Mozilla Firefox, Google Chrome, Opera etc.

Sphere of application: implementation and harmonization of the electronic document management of accredited testing laboratories in accordance with international ISO/IEC 17025, ISO 9001 and ISO 9004.

Electronic Document Management System of Accredited Testing Laboratory eLab

Features:

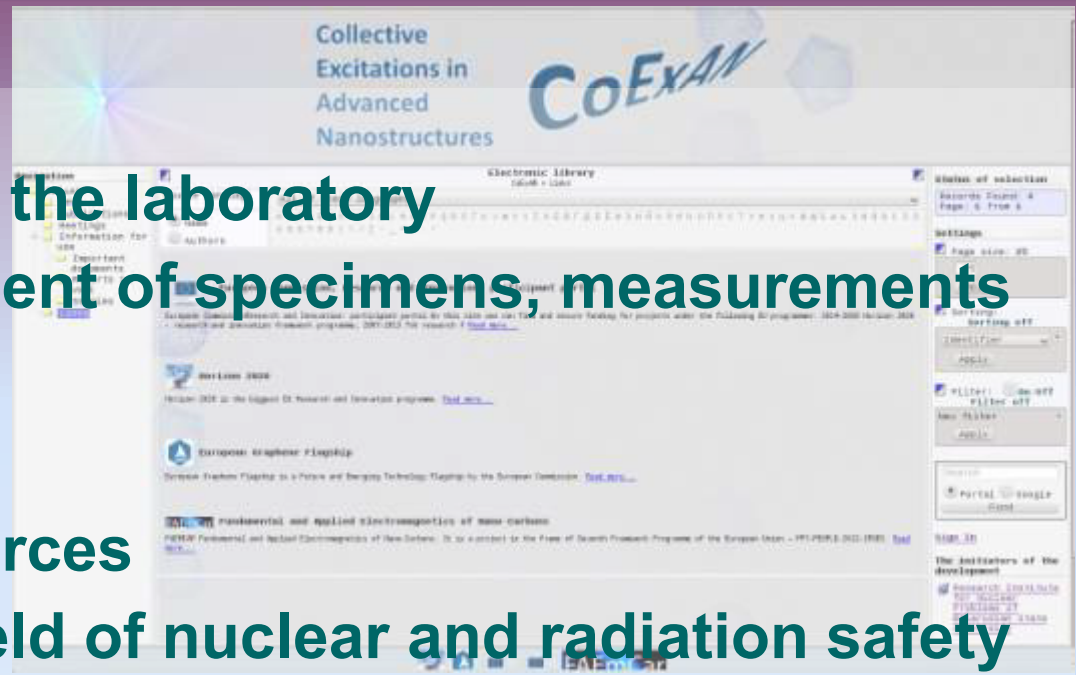
- software eLab is open to modifications by users,
- includes a standard set of log forms that can be changed,
- is easily adjusted to the specifics of each individual laboratory,
- runs on a secure server; it is not required to install some software on the client computer, it is sufficient of a standard browser,
- can operate both on a local intranet, or the global Internet,
- allows in the frame of a single installed copy of the product at the same time maintain the workflow of many laboratories and organizations, with different profiles.

Electronic Document Management System of Accredited Testing Laboratory eLab

Technical advantages:

- ability to extend the functionality of the system;
- customizable user interface and the preservation of its current state;
- fast convenient system of sorting, filtering and retrieval of data;
- automatic update and display the current status of the sampling,
- simple insertion mechanism, editing, deleting records, editing multiple records simultaneously.
- validation of input data, the abolition of common mistakes;
- exclusion of input data duplication;
- automatic generation of output documents for reports in prescribed form;
- possibility for user to make changes to the templates of the final documents;
- exclusion of the human factor and related errors in records and output documents.

Electronic Document Management System of Accredited Testing Laboratory eLab



Modification of the system:

eLab for electronic document management in the laboratory

eLab-Fuel for quality monitoring and management of specimens, measurements and passports of fuels and lubricants

eLab-M - for the meat and dairy industry

eLab-Atom for control of ionizing radiation sources

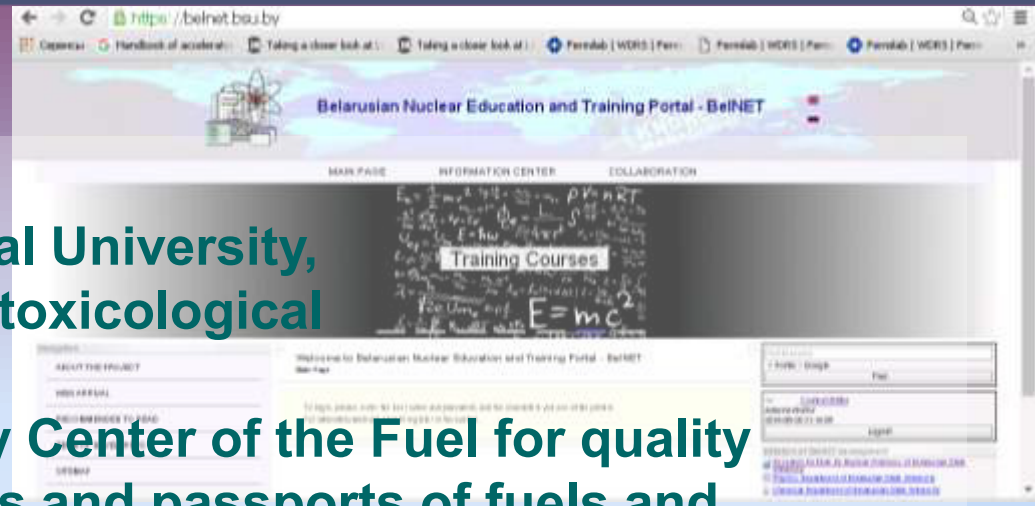
eLab-Control for control (supervision) in the field of nuclear and radiation safety

eLab-Science is an original content management system allowing cloud Internet technologies with sufficient level of security with the possibility of organizing "cloud" Internet platforms for joint work on the project

The system is easily configured for the needs of the project

Electronic Document Management System of Accredited Testing Laboratory eLab

Achievements:



2010 – eLab is implemented in the educational process of Belarusian State University, Belarusian State Technological University, Belarusian National Technical University, in the Chemical-toxicological laboratory of the Minsk Drug Treatment Clinic.

2012 – Commissioning of eLab-Fuel in 202 Chemmotology Center of the Fuel for quality monitoring and management of specimens, measurements and passports of fuels and lubricants of the Belarusian Armed Forces.

2013 – Commissioning of eLab-Fuel in Belarusian branch of company GazPromNeft.

2014 – Software eLab-Atom for control of ionizing radiation sources

2015 – Developed CMS eLab-Science

2015 – Portal of nuclear knowledge BelNET https://belnet.bsu.by

2017 – Portal of the project of Programme Horizon2020 Coexan https://coexan.bsu.by

2018 – Software eLab-Control for Intellectual information system of the Gosatomnadzor employee to ensure control (supervision) in the field of nuclear and radiation safety

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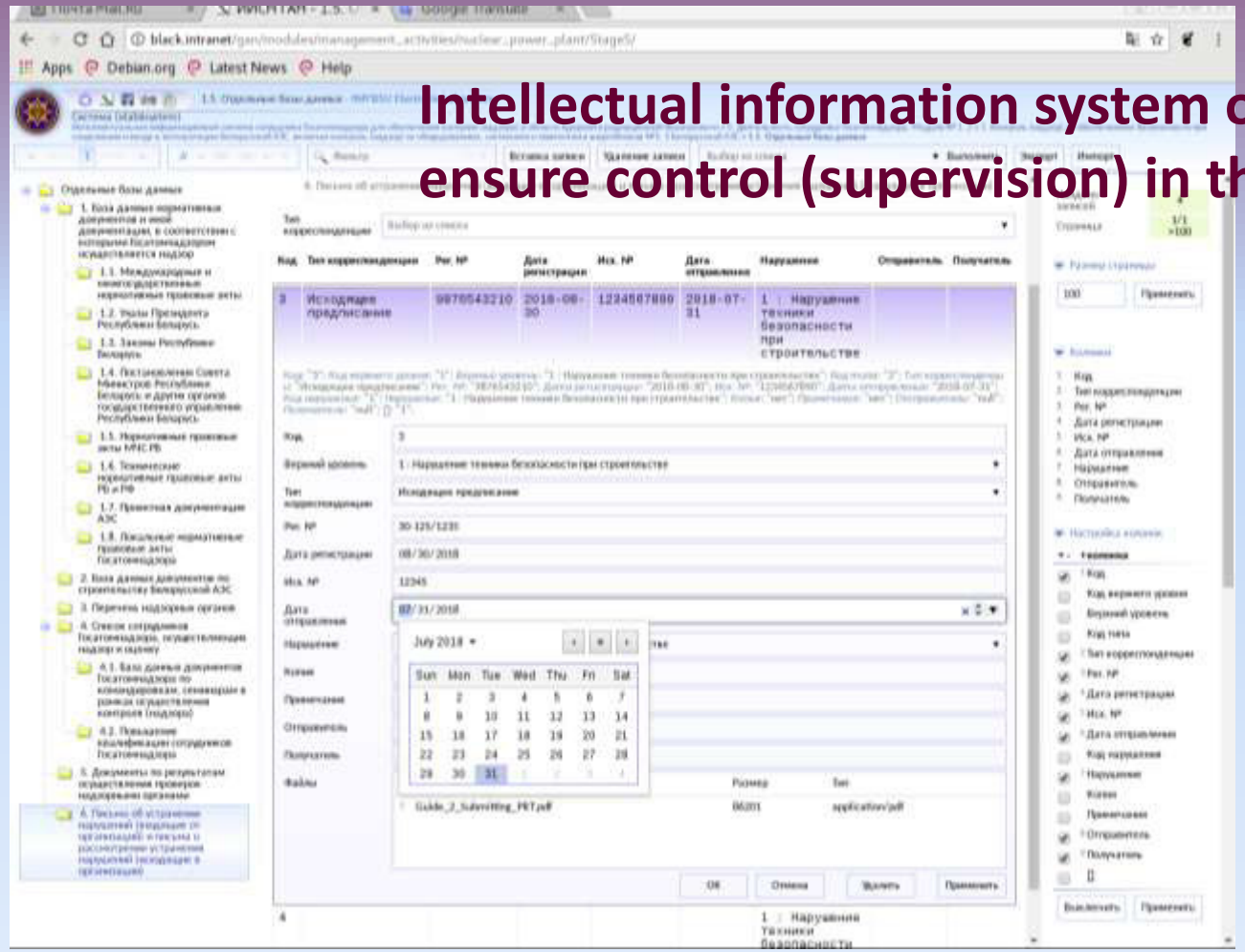

Intellectual information system of the Gosatomnadzor employee to ensure control (supervision) in the field of nuclear and radiation safety

1. Module for safety control (supervision) during the construction and commissioning of the Belarusian NPP
2. Module for monitoring (supervising) the radiation safety of ionizing radiation sources
3. Module for accounting and control of nuclear materials, radioactive waste and spent nuclear material

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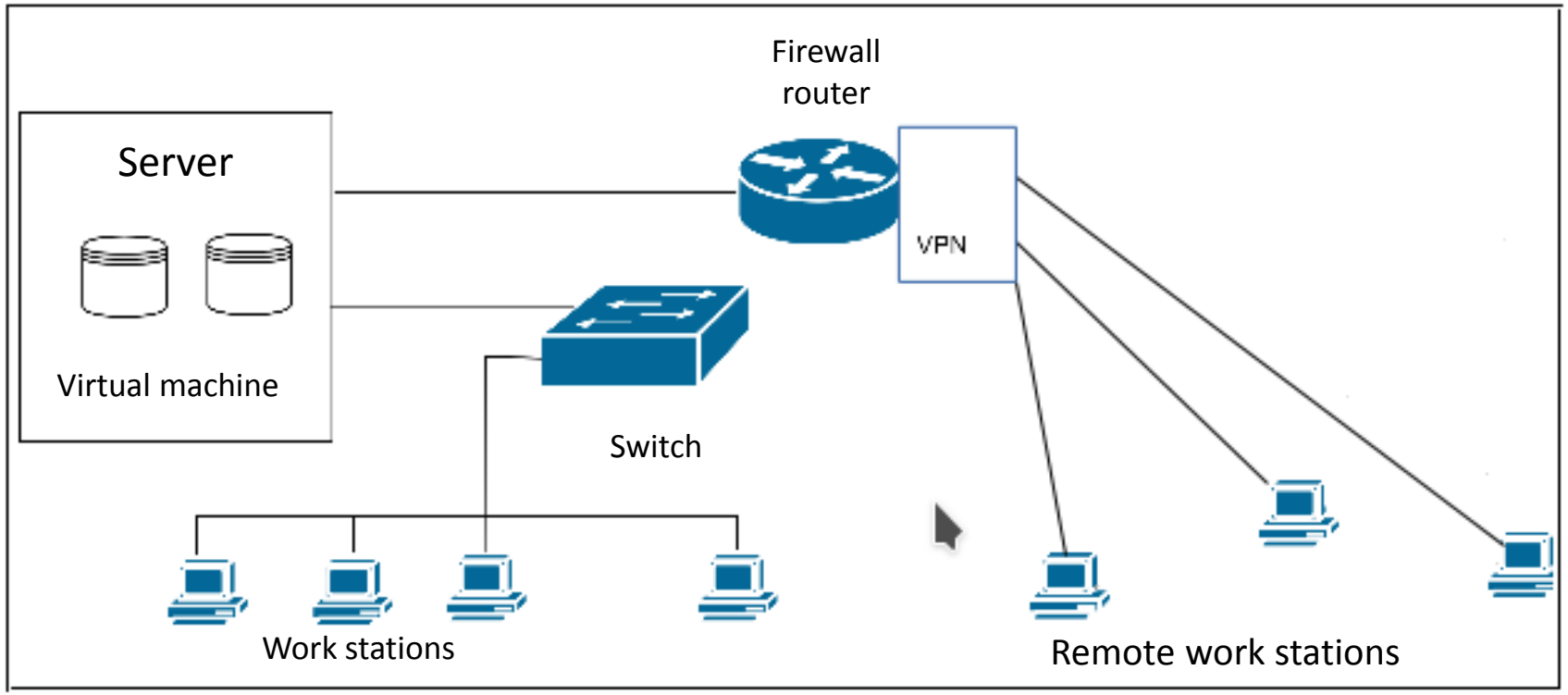


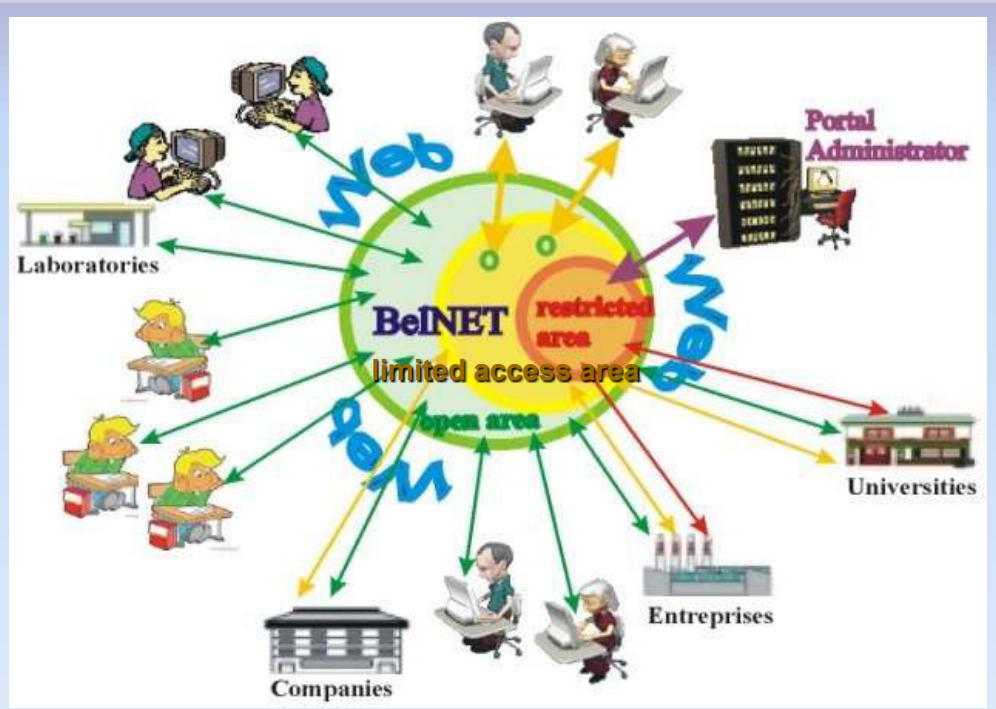
Network configuration

Distinctive features of the system:

1. Full-text search through documents.
2. The ability of the user to make changes to the templates of the final documents.
3. Increased requirements for information security of the system.

Electronic scientific resources (clouds) on the basis of CMS eLab-Science

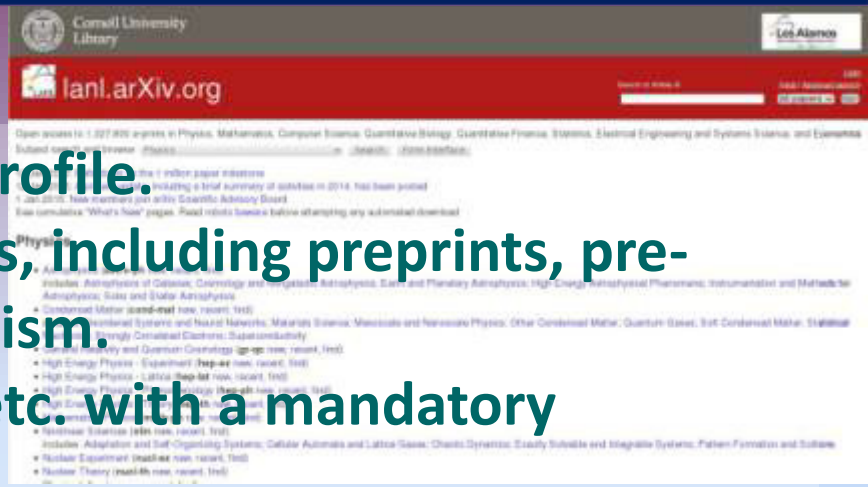
Cloud computing* is an information technology (IT) paradigm that enables ubiquitous access to shared pools of configurable system resources and higher-level services that can be rapidly provisioned with minimal management effort, often over the Internet. Cloud computing relies on sharing of resources to achieve coherence and economies of scale, similar to a public utility.



https://belnet.bsu.by

*https://en.wikipedia.org/wiki/Cloud_computing

Belarusian electronic scientific archive on the basis of CMS eLab-Science



- ✓ Archive of publications of the natural and humanitarian profile.
- ✓ The site for the operational placement of scientific articles, including preprints, pre-publications, with strict copyright control and anti-plagiarism.
- ✓ Languages of publications - English, Russian, Belarusian, etc. with a mandatory summary in English.
- ✓ The possibility of publishing not only articles, but also presentations, video materials, etc.
- ✓ Ability to create full-fledged Internet pages on scientific topics with formulas, graphics, drawings, video.
- ✓ The purpose of the archive is to promote the dissemination and dissemination of scientific knowledge.

Thank you for attention

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