Information and communication technology in cross-industry glossaries

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Abstract. Interdisciplinary glossary is proposed to ensure mutual understanding of specialists from various fields of science and technology. Glossary is designed with application of information technologies. The field of information technologies is considered. It is necessary for the understanding and cooperation of specialists in various areas. The technological solutions and applications for multi-disciplinary areas, results of testing of the developed techniques are presented.

1. Introduction

Currently, high-tech centers of nuclear medicine are in the Russian Federation to provide the population with quality medical diagnostics and therapy, where doctors work together with specialists of different scientific and applied directions. An appropriate multidisciplinary glossary is needed to ensure proper interaction on scientific and technical level between all the participants to work on a range of issues related to joint activities in the field of application of methods and means of nuclear medicine and radiation therapy in the diagnosis and treatment of cancer. This glossary should provide information complex, which includes a knowledge base, which contains terms, definitions and interpretations for the genetics, biology, radiobiology, radiochemistry, radiation safety, radiopharmaceuticals, oncology, accelerator technology, physical methods and means of radiological medical imaging, information technology.

The created glossary will allow specialists to have correct knowledge on matters related to their interaction with an adequate understanding of the terminology that meets all aspects of the teamwork. This is particularly important for new research (breakthrough) development, as in every area (from the list of multidisciplinary areas) cannot provide profound training of experts in all related fields. Moreover, the situation is exacerbated by the traditional untimely (or lack of) of quality textbooks, books and manuals on the new multidisciplinary fields.

Previously, the problem of misunderstanding among specialists in various fields has been solved on the basis of printed directories, containing the terms and definitions for specific areas. However, their use is more laborious and requires a lot of time searching for the information required.

An effective solution to this problem is to create an interdisciplinary network multimedia glossary of nuclear medicine and radiotherapy [1-2], which defines the purpose of the present paper.

2. Structure of the glossary

Glossary provides the following features:

- Preparation of structured information on the areas of expertise

- Structured to provide terminology
- Convenient alphabetical index

The functions that are available multimedia interface:

- Get one of the common terminology tested by qualified personnel
- Quick access to the necessary areas of knowledge thanks to a convenient navigation system and an index

The choice of development tools.

The following tools [3] were used for the development of a glossary:

- The environment NetBeans IDE software development
- PHP programming languages (5.4), SQL, JavaScript
- The environment for working with a data PhpMyAdmin

Characteristics of materials, works with a glossary:

- Text files, provided in the form of Excel spreadsheets, formatted in sections (Region | term | definition)

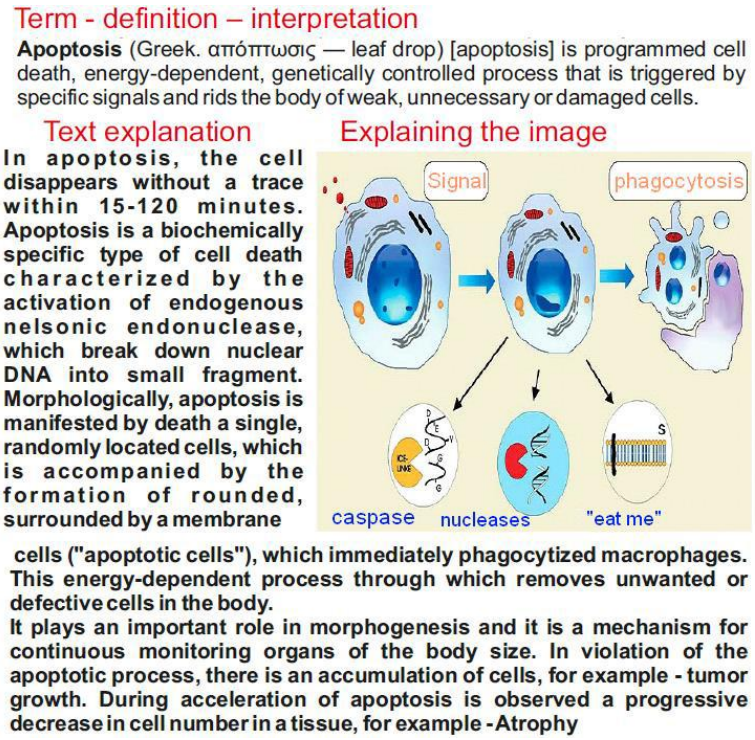

Figure 1. Model presentation of data in the glossary.

Multimedia Interface of interdisciplinary glossary is presented in the form of a web site with convenient navigation on the relevant sections of the areas of knowledge. All areas of expertise, as well as the terminology and definitions are arranged in alphabetical order, are included in the database.

3. Results

Interdisciplinary glossary with over 1,000 terms of definitions and interpretations.

Of them:

- 180 by accelerator technology
- 200 in Computer Science
- 200 Genetics
- 110 Radiochemistry

- 56 Cytology
- 280 Oncology
- 50 Electronics
- 83 Color and Light
- 28 Information Systems
- 102 Medical Physics
- 100 Physics

The remaining terms refer to radiobiology, radiochemistry, radiation safety, radiopharmaceuticals, etc. The contents of the glossary sorted by topics in alphabetical order. Glossary Materials agreed with experts of the relevant fields.

4. Conclusion

A multidisciplinary network multimedia glossary of nuclear medicine and radiotherapy is developed. It contains over 1000 terms of definitions and interpretations of recognized experts to provide interaction of adjacent areas in the existing and planned centers of nuclear medicine and radiotherapy.

References

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