Multilingual geodetic dictionary in eLearning

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Key words: eLearning, Multilingual dictionary, Qedoc

SUMMARY

This paper will present the possibility of transformation of traditional, paper dictionaries, to the module for e-Learning in two steps. Analog basis is the Multilingual Geodetic Dictionary (in Serbo (Croat), Slovenian, Macedonian, Albanian, French, English, German and Russian), Belgrade, 1980.
Step One - Transformation dictionary to electronic form through TermWiki based solutions – "My Glossary" – and
Step Two - Implementation in the Qedoc software through the tests of knowledge.

REZIME

U ovom radu će biti prikazana mogućnost transformacije klasičnog, papirnog rečnika, u modul za elektronsko učenje. Analogna osnova rada je Višejezični geodetski rečnik (na srpskohrvatskom (hrvatskosrpskom), slovenačkom, makedonskom, albanskom, francuskom, engleskom, nemačkom i ruskom jeziku), Beograd, SGIGJ, 1980, a elektronska implementacija, kroz testove znanja, u Qedoc softveru.

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1. INTRODUCTION

The idea of multilingual geodesic glossary arose from the need to achieve easier international scientific and technical collaboration in geodesy. Due to the UNESCO's support, the idea was turned into a decision and in 1964 Dictionnarie multilingue de la FIG (DMFIG) – geodesic glossary in French, English and German – appeared.

This masterpiece was the foundation for the eight-lingual geodesic glossary published in Belgrade in 1980 by the Association of Geodetic Engineers and Surveyors of Yugoslavia. Large number of experts – as individuals or through their institutions – took part in the creation of about 5,500 entries in Serbo-Croat (Croat-Serbian), Slovenian, Macedonian, Albanian, French, English, German and Russian languages. (Stefanovic, 1980)

The circulation of that first (and only) multi-lingual geodesic glossary is not known, but the glossary itself is a rarity today and only few people have heard about it.

2. PAST 30 YEARS

In the year 1971 FIG published Technical Dictionary: Terms and Definitions as used in Surveying and Mapping in Germany with Equivalent Technical Terms in English and French, Preliminary Edition. Progress in science and technology made it necessary to revise the Preliminary Edition. This huge work which started between 1984. and 1990. resulted in the choice of terms selected and defined by competent technical committees, and specialists. English and French terms were checked by competent native speakers. (URL1)

The following organisations stand for the quality of the Glossary:
- German Association of Surveying (DVW)
- Working Committee of the Surveying Authorities of the Federal Republic of Germany (AdV)
- The Royal Institution of Chartered Surveyors (RICS)
- Association Française de Topographie (AFT)
- Ordre des Géomètres-Experts (OGE)
- International Federation of Surveyors (FIG).

Each volume of the Glossary contains:
- Foreword and Introduction in German, English and French.
- The Glossary Term and Definitions as used in Surveying and Mapping in Germany with Equivalent Technical Terms in English and French
- Register of the equivalent English and French terms.

Since the revision of the glossary was resumed by the IfAG (now the Bundesamt für

Kartographie und Geodäsie - BKG) in 1992, the following volumes were published and presented to the surveying community:

Volume 1: Theory of errors, adjustment methods and mathematical statistics
Volume 2: Geodesy
Volume 3: Geodetic Surveying
Volume 4: Cadastral Surveying and Cadastre
Volume 5: Geodetic Instruments
Volume 6: Topography
Volume 7: Photogrammetry
Volume 8: Cartography
Volume 10: Engineering Surveying
Volume 11: Hydrographic Surveying
Volume 12: Mine Surveying
Volume 13: Property Valuation
Volume 14: Land Consolidation
Volume 15: Urban Planning, Regional Policy
Volume 17: General Terms

The Internet site of the Multilingual Glossary has been revised and updated by the Bundesamt für Kartographie und Geodäsie – BKG. (URL3)

The FIG Multi-Lingual Glossary Board that had existed since the FIG Congress in Wiesbaden in 1971 was closed at the end of 2006 as its work came to its end.

Unlike Serbia, Croatia continued the glossary-related activities. The leading figure is Miljenko Lapaine, professor at the Faculty of Geodesy of the University of Zagreb, the vice-president of the Croatian Cartographic Society and the vice-president of the Croatian Academy of Engineering. He has published several dictionaries and papers concerning the terminology (Francula, Lapaine, 2003a,b, 2008; Francula et al., 1995; Husak, Lapaine, 2007; Lapaine, 1995, 1996, 2001, 2002, 2004, 2006; Lapaine, Francula, 2001; Lapaine et al., 1995; Lapaine, Fuckan-Drzic, 1994; Tutic, Lapaine, 1997).

Within the project - Creation of Croatian professional terminology – Phase ,2 one of three projects financed by the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia,. Is the Glossary of Cartography and Geoinformation, Phase 1, headed by Miljenko Lapaine, Croatian Academy of Engineering.(URL2)

Unfortunately, all the activities related to multi-lingual geodetic glossary in both the world and close surroundings have made no impact in Serbia.

Boosting development of science and technology derogated the glossary for its obsolesence and low utility value, since the Multilingual geodesic dictionary was published back in 1980. The only way to compensate this is just in the application of these new technologies and up-to-date knowledge.

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3. STANDARDS IN TERMINOLOGY

Modern society tends to overall standardization, thus every glossary and its creation is a kind of standardization. Bearing in mind the things aforesaid, we had to carefully choose the software environment. Besides the visual design and utility aspect of a software program, what is also important is the consistency in the application of standards. Although it is possible to create such a thing on one's own, it is much more elegant to use software that is already used globally. The authors had no difficulty deciding – TermWiki.

Taking into account that the creation of a glossary requires a great deal of teamwork, this choice:
- efficiently develop, manage and translate terminologies in a structured collaborative environment
- enables users to easily search, post, translate and share terms
- all entries are complete with a collection of relevant, term-specific data categories.
- The presentation of information is founded on a collaborative infrastructure wherein entries can be managed, updated, edited, and even created by all designated users;
- operates on a collaborative model; there are always other contributors around to advise, discuss or correct conspicuous errors
- detailed logs of which are available in perpetuity for the perusal of all users

3Di Search Technology - concept-based system that focuses on targeted content within specific industries in specific languages.(URL5)
The TermWiki solution is unmatched in the industry, allowing users to see:
- what term was changed,
- when it was changed,
- why it was changed, and
- how it can be reverted to a previous version.

A completely new function 'My Glossary' enabled the creation of the glossary.
My Glossary allows translators and technical writers to store, translate, develop and share their glossaries online, in a real-time, cloud based environment
Main benefits:
- Remotely accessible, cloud-based platform
- Collaborative term review, edit and translation
- Unlimited Glossary migration in XLS
- Advanced control and tracking features
- Intuitive User Interface
- Enhanced Search Functions
- Powerful Version Control
- ISO Compliant Data Categories
- Complete Tracking Capabilities
- Integration and Compatibility
- Structured Dispute Resolution
- Robust User Profile Management

TermWiki is an ongoing terminology project developed by CSOFT International, Inc.

Because terminological inconsistency is an issue that affects all different forms of written communication that accompany a complex product or deliverable. Terminology management simplifies the collaborative editing process and promotes consistency between:
- product lines
- functional groups
- document types
- product versions

Systematic terminology management
- enables translators to automatically look up and reuse terms
- simplifies post-translation quality assurance
- simplifies translation review
- is a good idea because consumers demand it
- is a good idea because industry experts say so:
    Common Sense Advisory says so
    The Localization Industry Standards Association says so.
    The International Organization for Standardization says so.(URL6)

Although this dictionary has its own kind of educational material, to create a true test of knowledge is needed dedicated, specialized software. Export function in My Glossary will allow the export to such a systematic material to Excel and then into Qedoc.

4. STANDARDS IN e-LEARNING

Standard in the field of e-Education is developing the IMS Global Consortium for learning, the World Society of Engineers and electronics IEEE. Starting the ADL (Advanced Distributed Learning) initiative 1999th year by the "Department of Labor", "Department of Defense" and "White House Office of Technology began the standardization of learning materials. The product of this initiative is a document specification standard called SCORM. The basic unit of learning in SCORM standard is a Web-based shared content object - SCO (Sharable Content Object). SCO consists of electronic material that makes a lesson and contain text, video and sound recordings, and interactive applications. Metadata associated with that content allows them to find and editing over the Internet by various criteria Computer-Adaptive Testing (CAT) decreased during the test of knowledge, frustration respondents, the number of questions (those with a high degree of knowledge are the following issues greater weight and vice versa). Maximum information is obtained when the respondent questions that match their level of knowledge.

At LMS - Learning Management System standard should be based creation, archiving and distribution of instructional content and testing, recording, tracking and analyzing results. Respect for the SCORM standard then allows the exchange of packages of different platforms and operating systems.

Moodle as a free, Open Source, a system for managing electronic learning, with support for MySQL and PostgreSQL, meets the SCORM standards and himself becomes the standard.

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Besides robustness, which is characterized by Moodle it meets the basic SCORM settings:
- Accessability – easy to find content on the Internet
- Reusability - in other educational entities
- Interoperability -Portability to any SCORM platform
- Durability -Durability due to the change of software and hardware

Moodle as a standard in eEducation still leaves the place to other tools for preparation of training modules. One of the products that maximizes the knowledge base for creating tests is Qedoc. The structure of the dictionary where there term and definition Qedoc imported into the table on the basis that it generates random questions.

Qedoc Quiz Maker - allows programming of content for interactive learning, using multiple choice questions, completing and correcting the text, matching, providing text answers, solving anagrams and correcting the text and so on. Combination of options you get an extensive range of types of questions

Qedoc supports **two** fundamentally different learning methods - **quiz**. and **flashcard** set.

A **quiz** is based around "questions", learning follows the goal of maximizing points, can be used both for testing and for training, and treats all learners equally.

A **flashcard** approach is based around "learning items" - the learning path involves covering all the flashcards systematically and tracking/revising unlearnt items. Can be used only for training, and it is more systematic than a quiz. A flashcard activity adapts itself to each learner - and therefore does *not* treat all learners equally.(URL4)

Randomized set of flashcards is not really fully randomized, but selected using a complex and varying algorithm:
- The probability of recycling depends on the frequency of previous mistakes.
- All items should be covered faster than a purely random selection would entail, while at the same time avoiding predictability.
- assessment of how well the learner knows an item is not based on the latest attempt, but on the last *n* attempts,

All the critical learning material in a flashcard set is contained in a data table. Flashcard learning is suited to material which can easily be tabularized, like in dictionary

Adaptive test adjusts the current knowledge and specific subjects for him. Correct answer entails difficult and inaccurate easier the next question. Such testing allows an individual to a very small number of subjects solved an identical test.

Because of the ease of creating adaptive educational modules based on only one table the selection of educational software was also easy - Qedoc Maker .

5. CONCLUSION

The complexity of creating a new geodetic vocabulary beyond the capabilities of the author and requires an institutional approach. Examples from Germany and Croatia may be a good starting point for a similar project in Serbia. Jubilee 175 years geodesy can be magnified at the beginning of making Serbian Geodetic Dictionary. Only this will show the true value of this work.

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http://www.oicrf.org/,
URL3: Bundesamt für Kartographie und Geodäsie, http://www.bkg.bund.de/
URL4: Qedoc - a suite of quiz software tools and a repository of open educational resources
http://www.qedoc.org/en/index.php?title=Qedoc
URL5: Termwiki - a fast growing terminology portal and collaborative dictionary
http://www.termwiki.com/
URL6: CSOFT - a leading provider of multilingual localization, http://www.csoftintl.com/

BIOGRAPHICAL NOTES

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