# Collaborative Academy

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## SUMMARY

Collaborative software is application software that integrates work on a single project by several concurrent users. From the domain of free software, the MediaWiki collaborative software is probably the best known and most successful software today for presenting information on the Internet. Practical experience with three Czech project using MediaWiki is presented in the paper: Free Foundation for Information Infrastructure (Czech section) and its campaign against so called software patents and support for open standards, presentation of new Curricula in Geoinformatics at the Czech TU in Prague and new wiki of Czech users of GRASS (Geographic Resources Analysis Support System). Utilization of MediaWiki in the frame of FIG Virtual Academy projects is suggested and discussed

## 1. Geoinformatics Study

This year (2006) we are opening, at the Czech Technical University in Prague, a new study program, the geoinformatics, as an alternative to the existing study of geodesy and cartography. Taking into account the recent fast development of information technologies we have decided to prepare a new study program that would combine the computer science with our background of geodetic and cartographic know-how [1, 2]. With the new focus we also put more space to project oriented education, mainly in the field of software development, some examples of our model projects are [3, 4] or an geo-information project *Manala* [5] (we plan to present the *Manala* project at the FIG Congress in Munich, 2006). We would like to stress that when preparing the new study plans we benefited from our contacts and experience from FIG working meetings, namely from the Commission 2 for professional education and its Virtual Academy. What we hope might be interesting to our colleagues from FIG is that the master degree program in geoinformatics will be also given in English.

With the new study program we had to decide how to present it to the professional society and, first of all, to our potential clients, i.e. our new students. When geoinformatics was accredited, we had to publish many various pieces of information like new study plans and syllabuses. We considered alternatives to traditional static web pages, that would enable easier and more productive ways of managing of our information and materials on the web. The main disadvantage of traditional HTML web pages is, that they rapidly tend to outdate if not regularly maintained. Natural answer to this problem are dynamically generated web pages. In this category, webs bases on PHP technology are probably dominant today, mainly

when powered by a database system. Yet another question asks to be answered, who and how is going to update the database records and information integrity. Clearly the best practice is if information is maintained directly by those who are responsible for its topicality and the user interface must be available from any web browser. Having all data stored in a database and present them dynamically also guaranties a common and unique appearance of the web. After considering most relevant systems, our choice was MediaWiki for collaborative writing [6] licensed under the GNU General Public License [7].


## 2. MediaWiki

Let us quote from [8]: MediaWiki is a Wiki software package licensed under the GNU General Public License [7]. It is a feature-rich wiki implementation written primarily for Wikipedia [9] and other Wikimedia Foundation projects, but also used by many other wikis.

Term wiki comes from Hawai'an where it means 'fast' and wiki is a really very fast tool for publishing and maintaining information on the Web. Several wiki software exist today but probably the most powerful and widespread today is MediaWiki, written in PHP and powered by MySQL relational database management system [10]. But what makes Wiki so unique tool is not its technical background but its open philosophy, best demonstrated by Wikipedia project of the free encyclopedia that anybody can edit. This concept of open access to data is revolutionary, compared with traditional scheme of building information systems, but believe it or not, it works. All changes are stored in the database, history is always available with detailed differences of selected versions. This feature is the main protect against malicious interferences and it is a fairly effective productive guardianship. Of course, it is also possible to limit active access to database only for registered users.

Whatever impressive the power of MediaWiki and all successful examples of its practical applications might be, the best motivation is always personal experience. Our first practical usage of wiki dates to 2004 when we took active part in the European campaign against the draft of the EU directive *"on the patentability of computer implemented inventions"*, also known as the software patent directive. It is above the scope of this short article to discuss the problem and possible impacts of *softare patents* on European IT industry. Supporters of the directive were represented by huge international software companies like Microsoft and the European Patent Office; opponents of the proposed software patent dirrective came mainly from small and medium scale Europen IT enterprices and from the academic background.

The dirrective on the patentability of computer implemented inventions was also heavily promoted by European Councel and the oppenents assosiated in sevelar nonprofit orgatizations like Foundation for Free Information Infrastructure (with Czech section [11]) tried to adress national polititions and lobied against the dirrective. Our major role was to collect all available information and various technical materials to give feedback and arguments in discussions and background for writing articles and during this collaborative effortt, MediaWiki was our major working horse [11]. What seemed at the begining to be a lost battle of a dwarf with goliath, resulted in the campaign run by thousands of activists from all European countries, who managed to convince enough of Euorepean MPs and at

the last moment of the legislation process the European Parliament decided by a large majority to reject the directive on 6 July 2005. It was one of rare cases where professional community managed to overturn a European Councel directive.

Our second example is more prosaic, it is information system of Czech user group of Geographic Resources Analysis Support System (GRASS), administered by Martin Landa.



Wiki is probably the best tool for managing information systems like GRASS user group web pages. As mentioned before it is administrator's decision if the system should be open for anybody or restricted just to registered users. At the Department of Mapping and Cartography we follow the latter strategy. In any case, you can start actively using wiki, it means to add and/or edit pages, immediately and practicaly without any introduction.

It is possible to run several wikis on a single server, currently we run three virtual servers [12-14 ] on a single machine with automated nightly back-ups for all of them (all three wikis

at our department share a common MySQL database). Installing wiki software is trivial and strightforward, it takes just several minutes for an experienced administrator. If there is a displeasing feature of wiki, compared with traditional HTML web pages, then it is a lack of hierarchical structure of its articles. But wiki can olways be combined with traditional web pages if needed.

## 3. Towards Collaborative Academy

When discussing presentation of our new study program in geoinformatics we decided to put information on two different (virtual) wiki servers [13, 14]. We plan to start a series of annual seminars/meetings on geoinformatics in Prague and we hope to collect enough materials for publishing proceedings and other materials as a virtual electronic journal based on MediaWiki. If you visit our wiki at [14], you can find there our first call for papers for our first seminar planed for May 12th this year (2006). We expect authors to write their papers directly at the wiki when their abstracts are accepted. Apart from other features, wiki is also excellent tool for text revisions and it would be even possible to have papers revised anonymously. Meeting colleagues in person is great, but not always all of us are able to attend-thus our idea is to run our meetings in a semi-virtual way, each wiki article is accompanied with 'discussion' page and we believe that personal presence is not always necessary.

As we mentioned at the beginning, we are grateful for the benefit of attending FIG Virtual Academy and many other FIG meetings. In our short presentation we tried to attract your attention to a new phenomenon of publishing information using wiki. We believe that under the umbrella of FIG Commission 2 we can discuss if we can move from Virtual Academy towards Collaborative Academy. We believe that it might be fruitful namely in promotion of students' contacts. Last but not least, we would like to invite all interested participants to Prague next year, when Czech Technical University in Prague celebrates 300 anniversary. On this festive occasion we are planning an international conference *From Surveying to Geoinformatics*, oriented to our new study program and curricula in general.

**REFERENCES**

1. Leos Mervart and Ales Cepek: Geoinformatics Study at the Czech Technical University in Prague, FIG Working Week 2005 and GSDI-8, From Pharaohs to Geoinformatics, Cairo, Egypt, 16-21 April 2005
2. Leos Mervart and Ales Cepek: Geoinformatics Study, Acta Polytechnica, Vol. 45, No. 6/2005
3. Koska, B. et all.: The Result Presentation of the Development of Laser and Optic Rotating Scanner LORS and Introduction of Public Library of Classes and Functions SPATFIG. In: Optical 3-D Measurement Techniques VII, Volume I. Vienna: TU Vienna, 2005, vol. 1, s. 63-73.
4. Koska, B. et all.: Development of Rotation Scanner, Testing of Laser Scanners. In: Ingeo 2004. Bratislava: STU, Faculty of Civil Engineering, 2004

5.  Jan Pytel: Design of General Communication Interface for Applications of Geoinformatics (in Czech), In proceedings of Satellite Methods in Geodesy, VUT Brno, 2006, pp. 78-86
6.  MediaWiki: http://en.wikipedia.org/wiki/MediaWiki
7.  GNU General Public License: http://www.gnu.org/licenses/licenses.html#GPL
8.  MediaWiki: http://en.wikipedia.org/wiki/MediaWiki
9.  WikiPedias: http://en.wikipedia.org/wiki/Main_Page
10. MySQL: http://www.mysql.com/
11. Czech section of Foundation for Free Information Infrastructure: http://www.ffii.cz
12. GRASS Czech User Group: http://grass.fsv.cvut.cz/
13. Czech wiki of Geoinformatics Study: http://gama.fsv.cvut.cz/
14. Geoinformatics CTU in Prague: http://geoinformatics.fsv.cvut.cz/

**BIOGRAPHICAL NOTES**

Ales Cepek is a professor of geodesy from 2003, working at the Department of Mapping and Cartography, Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic (since 1992). Started his professional career at the Research Institute of Geodesy, Topography and Cartography (VUGTK), Zdiby (from 1980 to 1991) where worked on research projects, programming, analysis and implementation of data structures for cadastral programs, co-author of programs for adjustment and analysis of geodetic networks; later at geodetic observatory observations with circumzenithal (astrolab), project for estimation of parameters of local quasigeoid. At present conducting research in the field of applications of XML and object-oriented processing of geodetic and cartographic data.

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